DETAIL PROJECT REPORT

VISHWAKARMA YOJNA: VIII
AN APPROACH TOWARDS RURBANISATION

SANKI Village
SURAT District

PREPARED BY

STUDENT NAME	BRANCH NAME	ENROLLMENT NO
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PACIFIC SCHOOL OF ENGINEERING,
KADODARA, SURAT

NODAL OFFICERS NAME
PROF.MAYUR S. VEKARIYA

Year: 2020-21

Gujarat Technological University,
Chandkheda,Ahmedabad – 382424 Gujarat

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ON

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Year: 2020-21

Gujarat Technological University,
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CERTIFICATE

This is to certify that the following students of degree engineering successfully submitted

DetailProjectReportfor,

Village:SANKI
District: SURAT

Under

Vishwakarma Yojana: Phase-VIII

In partial fulfillment of the project offered by

GUJARAT TECHNOLOGICAL UNIVERSITY, CHANDKHEDA

During the academic year 2020-21.

This project work has been carried out by the under our supervision and guidance.

STUDENT NAME	BRANCH NAME	ENROLLMENT NO
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College Name:	**Pacific school of engineering**
College Stamp:	

ABSTRACT

The government of Gujarat has launched Vishwakarma Yojana (scheme) for development of villages by identifying the requirements of villages. Under this scheme, the villages are surveyed and this project was identified and selected for implementation. Rurbanization is to bring peace of mind to the villagers by providing them the basic amenities required and still keeping the village soul intact. It is about finding out what the basic facilities are present and what can be provided to betterment of the village. The present resources are made to such a use that it gives its cent percentage usability with sustainability.

Our village Sanki is located at 8km away from Palsana taluka. It is located on national Highway 48. Pin code of village is 394305. Postal head in Karan. Languages spoken are Gujarati, Marwadi, Marathi, Hindi, and English. Elevation/altitude: 22 meter above sea level.

The village's condition is good then other ordinary village. The village has good facilities of Milk Co-operative Society, 24hr Electricity, Panchayat building etc. But the other side the problem of congested aaganwadi in village, poor conditions of Primary school, Pond, Community hall etc.

The community hall should be built in village because in some function village people cannot afford the private venue for the function. The smart village design of Agriculture Co-Operative society is to build in village because the farmer's carting charges are reduced. And surrounding villages also take facilities.

To application of service and maintenance of some structure. And some sustainable structure should make in village. This factors affecting on the development of village.

The Sanki village don't has a basic amenities such as a public and personal toilet, street light, transport facility, good house condition, new aaganwadi structure, wide road and many more should be built in this village. This type of physical structure is not affordable by village people because lots of people are poverty-stricken. The selected village has been surveyed and data collected as per smart village under "Vishwakarma Yojna".

Key Words: Design Proposal,Rurbanisation, Village development,Good facility, aaganwadi, Community Hall, recreational facilities, etc.

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We are highly indented to **Gujarat Technological University**, Ahmadabad for providing us such opportunity to work under Vishwakarma Yojana to get real work experience and applying our technical knowledge in the development of Villages.

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ABBREVIATIONS

SHORT NAME / SYMBOL	FULL NAME
Sqmt.	Square meter
PHC	Public health center
SC	Scheduled cast
ST	Scheduled tribute
VY	Vishwakarma yojana
Km	Kilometer
CHC	Community health center
BPL	Below poverty line
PPPS	Public private partnership
GIS	Graphic information system
ITS	Intelligent transport system
PMAGY	Pradhan mantriAdarsh Gram yojana
SGDs	Sustainable Development Goals
UNDP	United nations development programme

Chapter :1

Ideal village visit from District of Gujarat state (ENA VILLAGE)

1.1 Background

India is a democratic country which mean by the people, of the people and for the people. Villages are our core part of India, Agriculture played major role in rural economy. At some point our villages need to be improved by developing various components such as roads, health facilities, drinking water, electricity, bus stand etc which increasing living standard of villagers.

Panchayat, rural housing and rural development has the vision is "Effective participatory local self-governance by Panchayati Raj institutions for inclusive growth of people and all-round development of rural areas." The mission of this organization "Empowerment of Panchayati Raj institutions to promote greater accountability and transparency, optimum utilization of resources, better implementation of rural development programmers and improved delivery of services."

ENA is nearest to the palsanataluka, district of Surat. Enais35 km away from the Surat. 4 km from Bardoli . There are many temples which is of Ramjimandir, Hindu temple, Bhimnathmahadev temple. Primary is granted which has all facilities like clean drinking water, girls and boys toilet, and electricity. Villager's main income source is cultivation of sugarcane, dairy industries,

Study Area Location: ENA, PALSANA, SURAT

ENAvillage is located about 35 km from the surat city and about 12 km from palsana village. As per census of india 2011 data, population of Ena is 3777 and total household residing in village are 1375. Basic facilities available here are electric, potable water, RCC and PAVER roads as well as bus stop and drainage facilities there is one anganwadi front side of the water tank.

Fig.1 Map of ideal village

1.2 Concept: Ideal Village, Normal Village

1.2.1 Objectives

- To provide physical and social infrastructure for the socio economic development of village.
- Different between scheduled castes / scheduled tribes and non SCs / STs population can be eliminate by providing elementary education;
- Cases of unhealthy diet particularly among children and women are eliminated;
- various tradition such as untouchability, segregation, atrocities against SCs are eliminated;
- Prevent distress migration from rural to urban areas, which is a common phenomenon in India's villages due to lack of opportunities and facilities that guarantee a decent standard of living;
- Create and sustain a culture of cooperative living for inclusive and rapid development;
- To substantially improve the standard of living and quality of life of all section of the population through -
  - Improved basic amenities;
  - Higher productivity;
  - Enhanced human development;
  - Better livelihood opportunity;
  - Reduced disparities
  - Access to rights and entitlements;

    Such Yojana provides dignity and equality to every person and can live in harmony with others.

1.2.2 Example / Live Case studies of ideal village of India/Gujarat

Baben, Enaandpunsari are considered as ideal village in Gujarat. PunsariVillage is Located in sabarkantha district of Gujarat. As From the ministry of rural development the punsari village received award of the best gram panchayat in 2011. This village has appeared as a model village with a new and modern basic urban amenities such as all-time power supply, wifi connectivity, CCTV cameras for security purpose and pucca roads which is connecting the village with other villages and towns.

Other important features of the village include:

- A reverse osmosis plant which supplies 20 liters of water to each household at INR 4/- .
- Use of natural energy, solar power for agricultural purposes.
- Accidental Insurance cover to one member of every household.
- Air condition primary schools with no dropouts.
- Bus facility called transportation facility for all household.

- Focus on behavioral change through campaigns and awareness drives. For this purposes loudspeakers have been installed in different parts of the village.

1.2.3The Idea of a model/Smart Village:

As per the census of india 2011, 68.9% of population lives in rural area in India. The idea of PradhanmantriAdarsh Gram Yojana has introduced by state government in the year of 2009-2010. The scheme is applied on 100 villages of India at pilot mode. In this scheme there is a allotment of INR 10, 00,000 per village. Most of the population of village is belonging to scheduled castes. MukhytaMantriAdarsh Gram Yojana also introduce in the year of 2011. Rural development scheme has been not gat success due to lake of holistic focus such as mental and social factors as unit which has overcome by these schemes. SaansadAdarsh Gram Yojana introduced the central government. Central government has aim to include MPs directly in the development of model village.

1.2.4 Key element of model village:

The most important points for the model village are sustainability, community involvement, and connectivity. Sustainability includes the Smart education, better health, clean drinking water, housing and environmental sustainability. Community involvement includes planning village development, mobilizing resources for the plan and utilization of government funds to increase responsibility, accountability. Technology considered space and ICT technology for the farmers, remote sensing for resource mapping and effective use of existing assets. Connectivity includes the digital, mobile and financial connectivity. It also includes the cheap and easy mode of transportation.

1.2.5 Resources:

Land resource, human resource, water, energy and power resource, agriculture resources such as seeds, fertilizers, equipment, financial resources and educational institutions at district level. Government supports from the various programs provide cash or subsidies.

Geographical Details ofEnavillage:

Sr no.	Description	Details
1	Area of Villages (Approx) (In Hector)	621 hectare
2	Forest Area	NA
3	Agricultural Land (In Hector)	592
4	Residental Area -	NA
5	Other Area (In Hector)	1 hectores

6	Nearest Railway Station (In Km)	15
7	Nearest Town With Distance	Bardoli (20)
8	Nearest Bus Station	Palasana
9	Road Connectivity Yes Village Connected to all Road	Yes

Table 1: Geographical Details

Demographical Details of Ena:

Sr no.	**Census**	**Population**	**Male**	**Female**	**Total house holds**
1	2011	3777	1895	1885	1375

Table 2: Demographical Details

1.3 Detail study (socio economic , physical , demographical and infrastructure etails) of ideal village/smart village with photograph:

Physical and demographical growth:

The village has total area of **621 hectare** Out of the total area, the area covered under the agriculture is 592 hectare The area covered under the net irrigation is 51156435.5 Sq.mt..the major occupations in the village are farming of sugarcane, dairy industries and fishing.

Economies profile:

Out of total population 3777 people are engaged in work activities. In the village there are two types of economic activities in which the majority of the people living in village are engaged. Out of 1859 people 98.40% of workers are associated with Major activity of employment (they earn for more than 6 months), while 1.60% are involved in Marginal activity (which gives employment to people for less than 6 months). About 77 people are cultivators having their own farm or they are co-owner of the cultivable land, while 581 are labor in agricultural activities.

Social scenario:

Total population of the village is 1848 as per the Census of India 2011. Out of which the male population is 889 and the female population is 959. In the village the population of the children between the ages 0-6 is 185 which is the 11.68% of the total population. The average sex ratio of the village is 1021 which is higher than Gujarat state average of 919. Enavillage has higher education rate compare to Gujarat state. The literacy rate of the village is 83.81% and from which the male literacy is 87.32% and female literacy is 80.39%. The population of the Schedule Caste in the village is 208, and the population of schedule tribes is 930 from which the males are 459 and females are 471. The total numbers of workers are 810, out of which 496 and 314 are male and female workers respectively.

Infrastructure facilities:

A. Physical Infrastructure facilities

Main source of drinking water

For drinking water isvarigruh installed in village with overhead water tanks and for distribution of water to the houses. The treated tap water is there is three in each house. Water is also stored in overhead tanks and sumps which are available in the village and from these sources water is distributed to households for their useful purpose.

Drainage Facility

The Village has underground drainage facilities and is in good condition.

Electricity Distribution

There are electric poles with street light in village. 24 hours electricity is supplied. The village is having GEB main power station for the 24x7 power supply in village.

Education facility

1 Aaganwadi, 1 primary school available. All necessary facilities of school are provided like separate toilets for boys and girls, playing facilities and standard education.

Figure 4: primary school,ena

Socio Cultural Facility in ENA Village

There is a one hall for sociocultural activities. But there is no adequacy for any cultural activity of village people because of less space. Thus it requires maintenance

Gram panchayat:

The village is having health care facilities also. For the various health related issues village is having public health facilities. In the PHC there are 1-2 beds for patients.

Other Existing facilities in village:

- Services such as health and education, which in turn contributes to sustainable development.

- There is a primary school in a village.
- Internal roads of village & street are of cement concrete road & paver block is paved on both
- Sides of cc roads, most of internal roads are paved with covered block.
- There is a covered underground drainage line which connects the near creek.

- House are all pucca houses.
- There are government health centers near the village.
- A village has a cinema theatre near Bardoli city.
- There is tap water facility at each houses of village, and have a overhead tanks.
- A health care center is also in care for villagers
- A large community hall and a town hall for a assembly of a peoples.
- There is 24hrs electricity facility available for residential propose and 8hrs for agricultural purpose.
- A waste is collected door to door by tractor and then disposed at a pit.

1.4 How to develop the ideal village/ key elements of ideal village:

For the development of Ideal village following factor should be consider:

- Reduce distress migration from rural to urban area, which is a common phenomenon in India's villages due to lack of opportunities and facilities that promise a decent standard of living;
- Ideal village "hub" should be made, that could attract resources for the development;
- Provide easier, faster and cheaper approach to urban markets for agricultural produce or other marketable material produce in such village;
- An ideal village should have the proper sanitation facilities and has separate disposal site for the sewage coming from the households;
- The lanes of the internal roads and streets of the village should be dust free; and,
- An ideal village should have primary as well as secondary high schools to provide higher education to the villagers and the people can get industrial knowledge. The key element for the development of the ideal village to set the peace and harmony in the villagers; and,
- Development of ideal village is the best way of preservation and promotion of the cultural heritage.

Key elements of Ideal village:

1) Sustainability:

- Better health with special attention on maternal and child health;
- Practical and smart, effective education;
- Housing & livelihood; Capacity building of all stakeholders;
- Clean drinking water & sanitation, drainage facilities; and,
- Environmental sustainability - use of renewable energy.

2) Technology:

- Delivery of government amenities;
- ICT and space technology in the aid of farmers; and,
- Remote sensing for resource mapping and better utilization of existing assets.

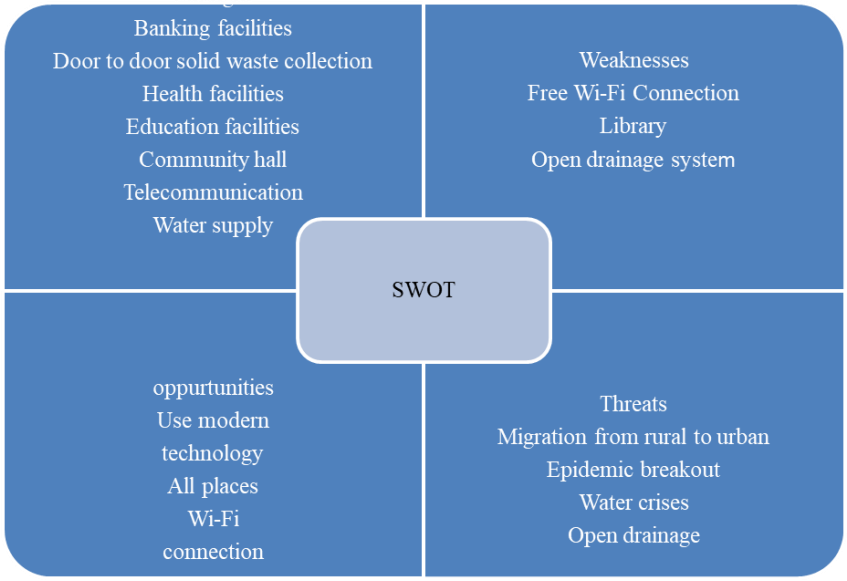
3) Community involvement:

- Planning for Village Development;
- Monitoring the utilization of government funds to increase responsibility; and,
- Influencing personal and community behavior.

4) Connectivity:

- Physical connectivity to towns and other places through roads;
- Easy and cheap means of transportation; and,
- Digital connectivity and mobile connectivity.

1.5SWOT Analysis of ideal village:



1.6 Future prospects of development of ideal village:

In case we need any more information from the ideal village Ena, we will visit the place. We will look upon the village Enato develop our assigned village. We will consider the Enavillage as ideal and we will take reference of Ena to identify the technology gap between our assigned villages (SANKI) for the future development of our village.

1.7 Benefits of the visits:

The following benefits are obtained from our Ideal Village visit:

We get to know the standards and working procedure that are adopted in the ideal village. Thus we can use them as a guiding parameter to develop our allotted village;

1. The role of basic infrastructural facilities in the life of rural people is understood by the visit;
2. The basic needs are understood by surveying and discussing with the talati and Sarpanch; and,
3. Importance of cleanliness and hygiene are known by observing the village areas, they have an impact on health of the resident.

We got to know about the working patterns of the villagers their needs and the aspects of their daily life.

Chapter : 2

Sanki Village Literature Review (Civil part)

2.1 Introduction: Rural and Urban

As said by Mahatma Gandhi -

"India lives in its village".

This quote suggests that the India is the country of the village and around **70%** of the total population lives in the villages. The total numbers of villages in India are **640,867**, out of which **593,731** are villages in which people are living and **44,865** are the villages which are uninhabited (in which people are not living). The village can be defined as:

The community which is usually larger then hamlet and smaller then town, and which has the population density of about **400-500** per square kilometer. The population of village varies from **1,000** to **5,000**. The houses of the village are close to each other they dispersed in nature.

In the village the main occupation in agriculture and some small scale industries such as Papad making, small scale dairy industry, cottage industries, and such.

Now on the other hand **urban area** can be defined as:

The areas where the population density is more than **1,000** per square kilometer, and the areas where **75%** of males are engaged with the nonagricultural activities.

Urban areas are very developed, which means there is a density of human structures such as houses, commercial buildings, roads, bridges, and railways. The total population of the urban area is more than **10,000**. In urban areas the primary facilities such as drinking water facility, schools, electricity, health facilities are easily available where as these in rural areas these facilities are not available or they are not in adequate quantity. The level of urbanization increased from **27.81%** in the 2001 Census of India to **31.16%** in the 2011 Census of India, while the proportion of rural population declined from **72.19%** to **68.84%.**

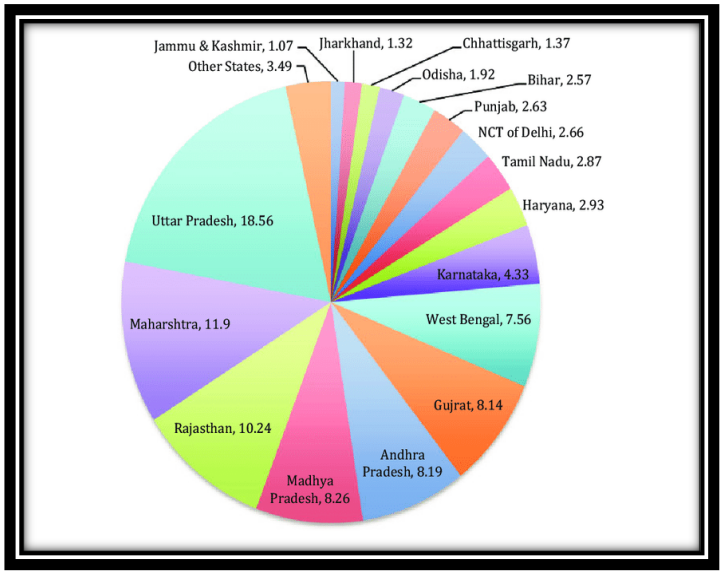
2.2 ANCIENT VILLAGES / DIFFERENT DEFINITION OF: RURAL AREA / VILLAGES:

As the major population of the country like India lives in the village hence various definitions of village are as follows:

- The village is an area of human settlement or communities, which is larger than hamlet and small in size than town.
- As per the Canada statics the village or rural areas can be defined as: The population outside settlements with less than **1,000** residences and population density less than **400** people per square kilometer is called rural area.
- As per United States the rural areas can be defined as: The rural areas are made up of open country and scattered housings, with population not more than 2,500 residences, and the population density may vary from I person per sq mi to 999 per sq mi.
- As per Planning Commission of India the rural area is:
- A town with a maximum population of 15,000 is considered as rural in nature. Panchayat makes all the decisions in these areas. In rural areas, agriculture is the predominant source of income, the various small-scale industries usually seen in villages are fishing, cottage industry, pottery, and so on.

2.3 Scenario: Rural / Urban India & Gujarat as per Census 2011:

After the independence 47% of the total population was living below the poverty line. As India is developing country the agriculture is the key factor for the development of the country, but the productivity of the agriculture in the India is very much poor compared to the rate of increase in population. The incremental rate of the population of India in last 45 years is 2.2% per annum. There is a great relationship between the poverty and rural areas are the 70% of the total population in living in the rural areas where the



majority of the people are not accessible to the quality medicines, and where the people are not much literate.

About 20 million middle class or BPL (Below Poverty Line) families are spread across the 6,00,000 villages across the country. In the village where the poverty is high and where the majority of people do not have shelter, about 60% of the homeless population lives in the village. The following graph shows the relative homelessness ratio of the Indian states.

2.4 Rural issues & Concerns:

As per the Census of India, 2011 estimates that the 70% of the total population of India lives in the village, where the villagers does not have adequate land holding and opportunities for economic growth of the village which ultimately affect the growth of Indian economy. Various issues related to rural areas are as follows:

1. Inadequate employment opportunities
2. Population
3. Natural resources
4. Pollution
5. Education
6. Health
7. Infrastructure
8. Globalization
9. Problems of livelihood

1. Inadequate employment opportunities:

Due to inadequate employment opportunities, the people of village are enable to eam 1. Adequate wages, to sustain their livelihood. As a result 40 to 45% families, who earn less than INR 11,000 per annum, are classified as below the poverty line. Apart from this the rural people also suffers from shortage of pure drinking water, poor health care and lower literacy rate.

2. Natural resources:

The natural resources are decreasing day by day this results in the insecurity of food and employment, compelling about 40% of the rural population to live in poverty.

3. Pollution:

Increasing pollution results in the depletion of clean drinking water, which creates the adverse impact on agricultural production.

4. Education:

The poor education facilities, results in the low literacy and unemployment among the youth of the village. The average literacy rate in the village is about 50-65%, it is as low as 20-25% for the female literacy. The less literacy rate affects the development of the village and ultimately affects the growth of country.

5. Health:

People's health in the villages are affected by the improper facilities of the sanitation and drainage disposal, poor drinking water quality, due to unhygienic conditions, inadequate health care facilities, and many other causes. Not only due to the improper facility of the health care but the ratio of mortality is also increased because about 40%a of the health-care staff remains absent for most of the time.

2.5 Various Measures for Rural development:

Various measures and schemes for the rural development in India are as follows:

Various schemes are as follows:

1. Intensive Agricultural Area Programme (LAAP)
2. Intensive Agricultural District Programme (IADP)
3. High Yielding Varieties Programme (HYVP)
4. Rural Industries Projects and Rural Artisans Programmes (RIP and RAP)
5. Integrated Rural Development Programme (IRDP)

Various other measures are:

1. Welfare of rural masses:
2. Increase in rural employment and literacy rate;
3. Minimum fare to the landless labors;
4. Growth of housing facilities for the villagers;

5. Primary health care facilities;
6. Development of education facilities; and,
7. Various other facilities: such as drinking water facilities (RO plant), proper sanitation facilities, and electricity generation plants and so on.

2.6 Various guidelines/Norms for Villages for the provisions of different infrastructure facilities:

1. Indira Gandhi awash Yojana
2. Swarnajayanti Gram Swarojgar Yojana
3. Swajal project
4. PMGY (Rural)
5. Jawahar Gram Samriddhi Yojana District Primary Education programme

2.7Projects / Schemes by Government Sector:

Various government and private sector schemes for the development of the rural arca are as follows:

- National Rurban Mission DeenDayalAntyodaya Yojana
- Pradhan MantriAwaas Yojana
- SansadAdarsh Gram Yojana.
- MukhyaMantriAdarsh Gram Yojana
- E-Gram Yojana
- Guideline for village health sanitation & nutrition committee
- MukhyaMantriAdarsh Gram Yojana

2.8 Literature review:

"Review of the Community Building Construction and Maintenance Process in Zimbabwe Case Study of Dlawa Rural Health Centre, Nakayi District"

Global concern to reduce poverty and promote sustainable development is placing emphasis on activities at the local level. This is the same approach used by the Community Action Project (CAP), a component of the Government of Zimbabwe's Poverty Alleviation Action Programme that gives grants to poor rural communities for investment in social and economic infrastructure and improved natural resources management activities. The objective of the project is to build the capacity of poor rural communities to improve their wellbeing in a sustainable manner. Amongst the projects eligible for funding under CAP is the construction or rehabilitation of buildings such as classroom blocks, rural health centers, staff housing, market shelter, children's day centers and community halls. This paper reviews the process for planning, construction, operation and maintenance of such buildings by poor rural communities. The review is based on experiences from CAP funded projects, Lund University's International Construction Management 2000 course, literature review, Agenda 21 on sustainable construction and international experience from other countries. The proposed construction of a rural health center by a poor rural community in Zimbabwe is used as a case study. Strengths and weaknesses of the process are discussed, and recommendations are made for the improvement of the International Construction Management course at Lund University and the buildings construction and maintenance process for projects supported by CAP, and lessons drawn for other developing countries.

Conclusion:

From the analysis above, it is evident that the CAP has developed a robust and sustainable process for the planning, construction, operation and maintenance of buildings by poor rural communities 12 in Zimbabwe. The process helps develop social capital that is required for the improved standard of living of the communities. The major strength of the process is its ability to develop the capacity of poor communities to manage the whole process. However, there is still room for the improvement of the process. Recommendations in this regard have been made in this paper. The process also stands to benefit Zimbabwe in its current efforts to develop initiatives for urban poverty reduction, and other developing countries in promoting sustainable construction.

2.9 Literature review: 02

" A Study to Assess the Knowledge & Practices of Aaganwadi Workers & Availability of Infrastructure in ICDS Program, at District Mandi of Himachal Pradesh."

The Integrated Child Development Services Scheme (ICDS) in which Aaganwadi Centers (awcs) are the focal point for delivery of services, has been considered as one of the largest and unique grass root level early childhood development Programme to address health, nutrition and development needs of children, pregnant women, nursing mothers and adolescent Age group girls. Objective: Purpose of the study was to assess the knowledge and practices of Aaganwadi workers (awws) and Availability of infrastructure for AWC under ICDS. Methodology: This cross sectional study was conducted on 60 awcs and 60 awws of selected ICDS blocks of District Mandi, Himachal Pradesh by simple random sampling method. Observation, Brief structured interview and structured questionnaire techniques were used to collect responses from the awws. Results: All The awws and (97%) of Aaganwadi helpers (awcs) were trained and had been rendering adequate services but they were not Much reflective of the same when being questioned on the knowledge parameter. Majority, (98%) of awws provided different Services to the adolescent girls, like IFA & deforming tablets, non-formal health education and supplementary nutrition. Majority of awcs,(85%) had single room for sitting, cooking and storing food items, LPG for cooking food, (98%) and Pucca House, (98%). All awcs had doors, drinking water and toilet facilities, while (93%) awcs had adequate posters and charts. Some awws,(27%) reported discontent with their remuneration. Conclusion: awcs need to be strengthened in structure and Supplies and awws need to be given more salary so that they can be motivated to take interest in all activities of the project. There is genuine need to repair/replace the storing bins and other infrastructure time to time.

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2.10 Literature review: 03

Preparation and Research of Solvent-Free Epoxy Coating for

Drinking Water Tank

The development of a model of community garden benefits to wellbeing

Community gardens contribute to community wellbeing by influencing the nutritional and social environment. The aim of this research was to develop a model that communicates the many benefits of community garden participation as described in the academic literature, to a diverse audience of laypersons. This model is an example of effective knowledge translation because the information is able to be more than simply understood but also practically applied. From April to August 2015, a model depicting the many benefits of community garden participation was prepared based on a global, critical literature review. The wellbeing benefits from community garden participation have been grouped into factors influencing the nutritional health environment and factors influencing the social environment. The graphic chosen to form the basis of the model is a fractal tree of life. In October 2015, to test the models comprehension and to obtain stakeholder feedback this model was presented to a diverse group of community members, leaders and workers from the Tamaki region of Auckland, New Zealand.

Conclusion:

There are many benefits to wellbeing from community garden participation and the model presented here summaries these benefits as described in the academic literature and displays them in a model that was presented and well received by a diverse, layperson audience. The benefits to wellbeing can be grouped into factors influencing the nutritional health environment and factors influencing the social environment. This model is an example of effective knowledge translation and it can be used, adapted and developed by community groups, health promoters, government agencies and health departments internationally.

2.11 Literature review: 04

Preparation and Research of Solvent-Free Epoxy Coating for Drinking Water Tank

A three storey RCC frame of an old overhead water tank in BITS Pilani campus had developed wide visible cracks, rusting of steel reinforcement and concrete spalling conditions at many locations. The condition of these structures was assessed by visual inspection, non-destructive testing (NDT) like rebound hammer, ultrasonic pulse velocities, rebar locator etc. and laboratory tests, to ascertain their suitability for further use. Based on the results of the tests conducted RC jacketing technique using anti corrosive agent, micro concrete and polymer modified mortar for retrofitting was suggested and implemented. The NDT was conducted again after the completion of retrofitting of the structure. This case study presents the use of standard and innovative repair materials, appropriate technology, workmanship, and quality control for successful repair, strengthening and restoration of damaged structures.

Conclusion:

1. The E51 epoxy resin system is compounded with E42 epoxy resin, which can effectively improve the bending resistance of the coating.
2. The reactive diluent can effectively reduce the viscosity of the coating system, but when the amount exceeds 10% of the epoxy resin, the adhesion, impact resistance and bending resistance of the coating are significantly deteriorated.
3. The blending modified polyamide curing agent and the modified fatty amine curing agent are used to obtain a good balance between the pot life and the curing time, and the system has excellent resistance to medium corrosion.
4. The grading of 400 mesh, 800 mesh and 1250 mesh wear-resistant filler ceramic powder effectively improves the wear resistance of the coating.
5. The solvent-free epoxy drinking water coating is safe and non-toxic, and the health indicators meet the requirements of GB/5749-2006 “Sanitary Standard for Drinking Water”

2.12 Literature review: 05

"Case study and planning of smart village"

This article examines community-driven multiple use water services (MUS) as pioneered by the Rural Village Water Resources Management Project (RVWRMP) in the Far and Mid-Western development regions of Nepal. These regions are characterized by poverty, remoteness, rugged terrain, food insecurity, water scarcity, and post-conflict legacy. Water provision for domestic and productive uses provides opportunities to address poverty and livelihoods in environments with highly decentralized governance. This study explores the first-hand lessons learned in the RVWRMP in Nepal since 2006. This project is embedded within the local government. Key project entry points are decentralization, participation and empowerment. This article reflects how the community-managed systems are used for multiple uses whether they were designed for it or not. It focuses on household- and community-level changes and related institution building and participatory planning through Water Use Master Plans and a Step-by Step approach. Recommendations are made for scaling up multiple use services.

CONCLUSION

Smart villages are the need of the hour as development is needed for both rural and urban an areas for better livelihood and information technology will offer effective solution .there are successful technologies available , which have been implemented in urban areas. There is tremendous pressure on urban landscapes due to migration of rural people for lively hood. Smart villages will not only reduce this migration but also irrigate the population flow from urban to rural area. Ict/it and gis are the unbreakable pillars to support the whole process of village development .smart village concept will have potential to uplift the grass-root level of the country, hence adding feather in the overall development of India. Failure to utilize information technology tools for rural development is because of lack strategy, unfocused planning and above all monitoring and execution of the activities. All these activities need to be addressed based on the varying rural situations .a specially designed suitable framework for rural areas on the grounds of science, technology , engineering, regulations and management will play important role to build next generation smart village . Benefit of the smart village efforts are foreseen to be tremendous .smart village concept is having high replication potential in other countries of developing world. The concept of smart village may also be extended to small towns and also townships surrounding the big cities

Chapter : 3

Smart Cities/ Village Concept as per your idea and its visit

3.1 Understanding Smart village/ cities:

According to Mahatma Gandhi's philosophy and thoughts Smart village project provides,

"Global mean to local needs."

The meaning of the word SMART in terms of village is as follows:

S: Social, skilled and simple.

M: Moral and modern

A: Aware, adaptive and adjusting.

R: Responsive and ready

T: Techno savvy and transparent

Concept:

Collection of the strength and efforts of people and community respectively from the different streams and merged it with the information technology for providing henefit to the rural development.

Definitions:

"Smart Villages access to sustainable energy services acts as a catalyst for development - enabling the provision of good education and healthcare, access to clean water, sanitation and nutrition, the growth of productive enterprises to hoost incomes, and enhanced security. gender equality and democratic engagement."

In the smart village the villagers have an excess to the sustainable way of living and to the new technologies. They have the excess to the usage to the solar energy, biogas treatment plants, and such.

3.2 Smart cities bench marks, standards and performance measurement indicators

Field	details
EDUCATION	School enrollment rate
	Rate of literacy in village
	Female literacy
	Education quality improvement number
HEALTH	Percentage of birth registration
	Percentage of death registration
	rate of infant mortality in Percentage
	rate of mother mortality in Percentage
	Percentage of organizational matemity
SANITATION	Work of 100% individual toilets
	Arrangement of pure drinking water
	Sanitation in public places
	Door to door solid waste disposal system
	Any incident of epidemic during competition
PANCHAYAT	Panchayat tax
	Has area based assessment been implemented?
	Percentage of presence in last Gram Sabha
	Percentage of presence of females in last Gram Sabha
	Facilities through E-Gram
	Total number of Gram Panchayat meetings held in last year
SPECIAL ACHIEVEMENT	Samaras
	Samaras Nirmal Gram Puraskar
	100% Bank accounts
	Paavangaam/Tirthgaam
	Gaurav Gram Sabha Award
	Best Gram panchayat Award

Table 3 Smart cities bench marks and standards

3.3Technological options for smart cities:

1. Smart energy.
2. Smart mobility:
3. Smart infrastructure.
4. Smart public service; and,
5. Smart care.

3.4 Financing smart Cities development:

Government of India funds, Matching contribution by States/ ULBS, User Charges and Public-Private Partnerships (PPPS). It also include the FFC recommendations including land based instruments, Municipal bonds, Borrowings from bilateral and multilaterals, National Investment and Infrastructure Fund (NIIF) and Convergence with other Government schemes.

3.5 Road Map and Safeguards for Smart Cities:

The initial phase in setting up a guide for a smart city is to know why there is a requirement for a brilliant city activity. This should be possible by concentrate the city's socioeconomics, including the occupants who are the foremost partners in the city. Individuals love to live in urban communities that are advantageous, live able, dynamic, and associated, so they can go anyplace at whatever point they need. Knowing the times of the subjects, their instructive foundation, their leisure activities, the city attractions, the organizations, and the assets of the group are altogether enter ventures in becoming more acquainted with the group and why there is a need to assemble a savvy city-Geographic Information System (GIS) instruments can be utilized to accomplish this progression.

The second step is to set up a smart city guide by building up a strategy that drives the entire activities. The strategy needs to characterize the parts, obligations. Procedures, and goals of the shrewd urban communities.

In the third phase component used for building up a smart city guide is drawing in the natives using e-government and viable administration, which prompts the expansion of proficiency and improving conveyance of administrations.

Smart cities: issues & challenges by smart city council India:

1. Replacing the existing infrastructure;
2. Sewer line, drain line and utensils should providing in timely clearance;
3. Financing of smart city; and,
4. Smart city space which occupied by the vendors.

3.6 Exposure visit to GIFT city, Smart Urban Governance and Urban Renewal:

We have not got a chance to visit the GIFT city in this semester. We have visitedan ideal village for the development of our allotted village.

The term smart urban governance terms the ideology of including the citizens in the feedback and approval for the cities welfare. They ask for citizen participation at various levels. It also includes the use of modern IT tools and technology for improving and facilitation of the lives of urban people.

Urban renewal, which is by and large called urban recovery, "rejuvenation" in the United States, is a program of land redevelopment in zones of direct to high thickness urban land utilize. Renewal has had the two triumphs and disappointments, Its advanced incarnation started in the late nineteenth century in created countries and encountered an exceptional stage in the late 1940s- under the rubric of reproduction. The procedure has majorly affected numerous urban scenes, and has assumed a critical part in the history and socioeconomics of urban communities around the globe.

Urban renewal includes the migration of organizations, the devastation of structures, the movement of individuals, and the utilization of prominent space (government buy of property for open reason) as a lawful instrument to take private property for city-started improvement ventures. This procedure is additionally completed in rustic territories, alluded to as town restoration; however it may not be precisely the same by and by.

Now and again, recharging may bring about urban sprawl and less clog when territories of urban communities get turnpikes and interstates.

Urban renewal has been seen by defenders as a monetary motor and a change component and by commentators as an instrument for control. It might improve existing groups, and now and again result in the destruction of neighborhoods.

3.7 Study area of BabenVillage:

Baben is **2** km from the Bardoli. The village has total population of about **15610** as per the **2011** Census of India, out of which the male Population is of **8642** and female population is about **6968**. Total no of household in the village are **3146**. The roads are made up of RCC and the internal streets area of paver block. The Village also has its gram panchayat office.

The main crops grown in village are Sugarcane,bajra, and wheat. Along with this there is fishing done in the river tapi situated near the village.There are water tanks, stationary, shops , bus stand school, hand pumps, aaganwadi, temple, banks , ATMs, primary health center , higher secondary school and animal health care etc.Drainage facility is there in village from which **80%** drainage area is covered. The village is also having bus stand where there **6** buses stops. Electricity is available for than 6 hours. The waste is collected by door to door collection. Canal, well and boring are the source of irrigation.

There is provision of primary health Centre and there is also the provision of animal hospital on the road about 1 km from gram panchayat.

The village has one primary school. One secondary school and two Aanganwadis with very good condition.

Figure 8: visit to smart village

Geographical Details of Baben:

Sr no.	Description	Details
1	Area of Villages (Approx) (In Hector)	4.66 kms
2	Forest Area	NA
3	Agricultural Land (In Hector)	NA
4	Residential Area -	
5	Other Area (In Hector)	
6	Nearest Railway Station (In Km)	NA
7	Nearest Town With Distance	Bardoli 2 km
8	Nearest Bus Station	Bardoli2 km
9	Road Connectivity Yes Village Connected to all Road	Yes

Table 4: Geographical Details

Demographical Details ofBaben:

Sr no.	Census	Population	Mal	Female	Total house holds
1	2001	11,720	6334	5386	2637
2	2011	15,610	8642	6968	3176

Table 5: Demographical Details

3.8 Infrastructural facilities:

A) Water tank facilities:

In Baben village, there is two elevated water tank. It has capacity of 50,000 liters and 1, 00,000 liters which distribute the water throughout the village by gravity force. The village has also its own R.O. treatment plant.

B) Drainage facilities:

Drainage facilities is there in village from which 80% drainage area is covered. No proper treatment is given to drain water.

C)Transportation:

The nearest railway station is Bardoli which is 2kms away from the Baben. The village is also having bus stand where there 10 buses stops. The village has 3 bus stands.

D) Road network:

- There is a 12mtr. Wide main WBM roads & interior roads with both side pavered with paver block.
- Internal roads of village & street are of cement concrete road & paver block is paved on both sides of cc roads.

Roads are the main aspect of the any infrastructure facilities in the town or villages. It connects several important place such as work place, markets, important institutes , educational institutes, panchayat office etc.

E)Electricity:

Electricity is available for the more than 6 hours. The power supply is also used for domestic,agricultural, commercial purpose.

F) Health facilities :

There is provision of primary health Centre and there is also provision of animal hospital on the road about 1 km from gram panchayat.

G) Education facilities:

The village has one primary school, one secondary school, one higher secondary school and two anganwadis with very good condition. The Education in the higher secondary school is equivalent to the education given in the city schools.

H) Village pond:

The village has its own pond. It is near police station on main road. The pond water is being used for irrigation and for drinking purpose.

3.9 Smart infrastructures:

Smart infrastructure is the interaction between technologies and equipment. Smart information and smart ICT has that strength to transform the way of plan and handle the infrastructure, it is improving the structure and the quality of life of people who tives in urban

and town. One of the major parts of design of smart cities is smart infrastructure. Intelligent Transport Systems (ITS) has aim of efficient public transport, smart parking and road safety.

3.10 Cyber security:

Today's era is of technologies, now a day the villages are also adopting the new technologies for their growth. In this modern era the cyber security is an important aspect for the safe and crime free development of smart villages. Cyber security is the concept of hardware to software and software to the interface of human computer with the use of cryptography which means art of solving codes. Different technologies used for the cyber security are:

- Space-time awareness: It includes GPS for locating the real time locations and to take real time data.
- Sustainability: It includes embedded security in the network.
- Scalable networked architecture: It emphasis on the smart architectures which will need to scale in real time data for the macro level solution.
- System integration: The system should be integrated with physical embodies for detecting the cybercrime area.

Chapter : 4

Introduction about Sanki Village

4.1 Introduction about Village:

"The future of India lies in its villages"- Mahatma Gandhi

Villages are the real nerve components of our country India. To aim for the overall development of our country we have to aim for the development of our villages. Also a large percent of our population resides in village. The main aim of this project is rurbanization, that is to provide for basic infrastructural components so that the migration of people from village to cities is reduced.

Sanki is a Village in Palsana Taluka in Surat District of Gujarat State, India. It is located 25 KM towards south-east from District headquarters Surat. Latitude: 21.1385 Longitude: 72.9849 Pincode :394305 Near sanki village there are many more villages are also located within 10Km of it periphery like chalthan 2Km away, bagumra 2KM, tatithaiya , karan 1km.

The motivation behind the VY venture is to give specialized arrangement of the issue of villages at the designing perspective to the Gujarat government. In this task answer for the basic issue of village are given by the designing understudies of GTU.

4.1.1 Need of the study:

Village studies have their own importance. These have enriched the knowledge of the Indian Society in general and rural India. These have given great encouragement to the growth of rural society. After independence, planners in India realized that unless Indian villages were properly studied, no real progress could be made. Scholars now began to pay more and more attention to village studies.

To develop the village for making it an ideal village, it is necessary to first understand its location, resources, etc. so we can come to know its advantages owing to various factors like location, water bodies available, and proximity to sea and so on. Not only that we can also take care of the threats posed owing to the same and take care of it to reduce the dangers and impacts

4.1.2 Study Area: SANKI,PALSANA, SURAT

Sanki village is situated in the Palsana taluka of Surat city. The village is located about 21 km from Surat city and about 7 km from the Palsana. The village has total population of about 1100 as per the 2011 Census of India, out of which the male population is of 540 and female population is about 560. Total no. of households in the village are 275. The total population of SCs/ STs is 386, out of which 208 are male and 178 are female. The roads of the village are made up of RCC and the internal street are of paver block. The village also has its Gram panchayat office.

4.1.3 Objective of the study:

1. To study the existing components and condition of our village “Sanki”.
2. To identify the issues and problems faced currently by the villagers.
3. To analyze existing physical and social utilities, public and semi-public buildings as well as infrastructure and to design the comprehensive planning for village.
4. To design for sustainable planning and for Rurbanization.
5. To improve social life quality of villager.
6. To reduce migration from rural to urban areas.

4.1.4 Scope of the study:

The objective of village study is to give idea about its layout, its design, the facilities available in village, requirement of people, things required to develop village. It helps in planning rural reconstruction, useful information related construction, requirements. It helps to getting

- Analysis of study
- Problem identification
- Solution of the problem
- Designing new facilities

4.1.5 Methodology/study Framework:

There is a step by step methodology adopted in this Vishwakarma Yojana Phase V. Under this following steps were done:

1. Literature topics allotted
2. Literature study and summary preparation
3. Ideal village study : Ena,Bardoli
4. Techno- Economic survey of Ena
5. Visit of allotted village : Sanki
6. Techno-Economic survey of Sanki
7. Identifying the issues
8. Providing the design proposal

4.1.6 Various infrastructure facilities, its types, importance in rural context.

The prime job in rural areas is agriculture, and for the effective produce from agriculture, it is must to provide the various infrastructural facilities of:

2) Irrigation
3) Energy requirement (Electricity)
4) Places for storage & marketing of the produce
5) Agro processing units
6) Proper health care facilities
7) Proper housing units
8) Potable water facility
9) Schools
10) Sanitation
11) Transportation

1. **Irrigation:** It is noted that a large area of sown land is unirrigated. Hence to solve this issue and to make water easily available for the crops to grow properly, there must be a provision of proper irrigation facilities in the form of tube wells, canals and others.

2. **Energy requirement (Electricity):** Energy in the form of electricity is now one of the basic requirements for sustaining life smoothly. Thus for all the works ranging from running pumps, tube lights , fans and charging of devices electricity is must. It must be in regular supply.

3. **Places for storage & marketing of the produce:** The harvested crops require special places (facility) for their storage and protection from water, direct sun, pests. There is also requirement for place for their marketing like well set up markets
4. **Proper health care facilities:** It is the most necessary requirement of humans. Primary health centers should be present for treating the villagers and guide them for further health issues.

5. **Proper housing units:** Housing is the most basic need of human and the first of all the infrastructural needs. Proper hygienic living conditions that sustain and prosper inmates of house should be provided to all the people of rural area.

6. **Potable water facility:** Water that is safe from pathogens and is fresh should be available in ample quantity for drinking and other domestic purposes.

7. **Schools:** They are the main learning centers for the growing population of the rural areas and thus must provide them primary education.

8. **Sanitation:** There must be proper hygienic facilities constructed in each house of rural arcas in form of closed toilets and proper drainage system for handling wastes from the house.

9. **Transportation:** There must be provision for easy and sufficient transportation facilities for the rural population so that they can commute easily.

4.1.7 Available Methodology for development of related to Civil/Electrical

Objectives which were available in sanki village were panchayat building, water tank, underground drainage, approach and internal roads of rcc, primary school ,aanganwadi , temples, tap water facility.

4.2 Study area location: Sanki, Palsana, Surat

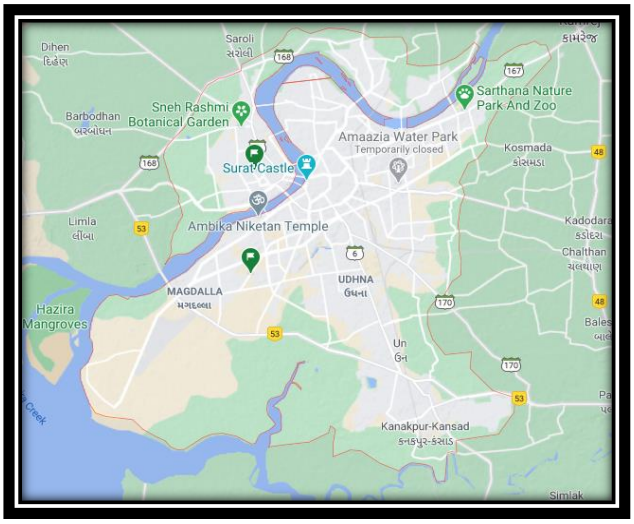
4.2.1 Base map, Village map, Study area

Under the project of Vishwakarma yojana phase VIII, Sanki village of Palsana taluka is been allotted to us for the development. The village is located about 7 km from Palsana and 21 km from Surat city.

Village Name	Sanki
Latitude	21.2912° N
Longitude	72.9741° E
Sub district	Palsana
District	Surat
State	Gujarat
Country	India

4.2.2 Physical and demographical growth:

The Sanki village has total population of 961 as per the 2011 Census of India, out of which total male population is 491 and female population is 470. The total number of households in the village is 203. The total population of the SCs/STs in the village is 386, out of which total male population is 208 and female population is 178.



4.2.3 Economic profile/ banks:

Out of the total population 587 people are engaged in the major economic activities, out of 467, are the farmers and 207 are the farm labours. 148 people are engaged in the small scale industry (GruhUdhayog). Major activities of the village are agricultural products, and dairy industries.

4.2.4 Social scenario:

The Sanki village has total population of about 1100 out of which 540 are male and 560 are female. The total literacy rate of the village is 82.67%, out of which male literacy percentage is 84.20% and female literacy rate is 81.14%. The average sex ratio of the village 957 which is higher than the sex ratio of the Gujarat, which is 919.

4.2.5 Actual problem faced by villagers:

- Proposed new aaganwadi is to be designed because of existing aaganwadi is so congested and damaged.
- There is no entrance gate in Sanki village
- A community hall is damaged and small as per new population census of village so it is to be designed.
- A lake area of village is to be developed for recreational purpose.
- There is a need of medical/ hospital facility in village.
- Handpump are blocked without use.

4.2.6 Social Scenario – preservation of traditions , festivals , cruisine

The villagers have unity between them. They get together to celebrate festivals like Navaratri, etc. The villagers celebrate all the festivals of Indian culture. This includes Navaratri, Diwali, janmastami ,Eid ,etc. Which represent Indian taste.

4.2.7 Migration Reasons / Trends

- Migration of sanki village the people here are migrating to the near by town Bardoli, Palsana and surat in the seek of job and the better education of there childrens.
- Other reason of migration is lack of physical and infrastructural facilities like phc ,aanganwadi , community hall and the rising industrial areas nearby.

4.3 Data Collection Sanki Village

4.3.1 Describe Methods for data collection

The methods used for the collection of various data, such as population count, existing facilities, data related to the occupation of the villagers, land area information are as follows:

Data collection is carried out by interacting with people like Sarpanch, Talati, Farmer, etc. of the respective village.

Data collected from talati includes number of classes available for study like Inspection, survey forms, personal interview, etc.

Basic data such as population, sex ratio, area of village, all other details as geographic details, demographical details, educational, institutional details, physical infrastructure facilities, etc. are collected from sarpanch office.

- Office record from office department like T.D.O office,school staff and so on:
- Interaction with talati and villagers
- Observing different parts of villages
- Internet surfing

4.3.2 Primary details of survey details

The results of primary survey carried out in the village are described below: Sanki is a Village in Palsana Taluka in Surat District of Gujarat State, India. It is located 21 KM towards east from District headquarters Surat. Time difference: 1 hours 30 min.

The primary survey was conducted to know the issues related to rural infrastructural facilities interacting with villagers and to get solutions from general people point of view.

Various types of questions asked to the villagers of different age group are as follows:

- Which types of existing facilities are available in the village?
- Condition of existing facilities is working or non-working?
- What is the primary requirement of villagers?
- Which basic amenity villagers need first?
- Is repairing feasible or redesign of existing infrastructural facility is required?
- What is source of income?

- Are there any expectations from government for economic development of village?
- Various occupations for the villagers?
- Water supply facilities and for how many hours?
- Electricity facilities and for how many hours?
- Disposing the waste?

4.3.3 Average size of the House - Geo-Tagging of House

The houses in the village depends upon the financial condition of the family. The house size on an average for the dwellers is 18" * 40". Though many are houses built under PMAY – Pradhan MantriAwas Yojana, about 100 nos. of house are passed under this scheme.geo- tagging of those houses is not done yet.

4.3.4 No of Human being in One House

Number of members varies between one to as much as ten in the village. However, on an average, there are 4 person as total there are 275 househols in village.

4.3.5 Material available locally in the village and Material Out Sourced by the villagers

For the construction of houses, mostly, cement, sand, aggregate, reinforcement bars i.e. concrete is used. They also use Bricks, paver blocks and other materials for residential construction. Let's not forget our kachamakan of the village Sanki being a village certainly has clay houses built up using the clay and dung. Out Sourced Material.

The construction materials are generally bought in the village from kadodara, palsana and bardoli which is merely at a distance of 8-20 km. it takes just 30 minutes to reach andbardoli.

4.3.6 Geographical Detail

The total geographical area of village is 410.17 hectares, total residential area is 5 hectares and Total irrigated land area is 398 hectares.

Elevation above MSL: 21 meters

Latitude: 21.2912° N

Longitude: 72.9741° E

4.3.7 Demographical Detail - Cast Wise Population Details / Which ID proof using by villagers

The population details as per Census of 2011 are tabulated below:

Particulars	Total	Male	Female
Total no. of Houses	275	-	-
Population	1100	540	560
Child (0-6)	78	48	30
Schedule caste	79	43	36
Schedule tribe	307	165	142
Literacy	82.67%	84.20%	81.14%
Total workers	467	334	133
Main worker	436	-	-
Marginal worker	31	12	19

Table 7: Sanki Village Data (census-2011)

4.3.8 Occupational Detail - Occupation wise Details / Majority business

Following are the three major occupations prevalent in the village: People of the village can be categorized by occupation in 3 major ways: Farmer, Animal Husbandry , Labour , business.

4.3.9 Agricultural Details / Organic Farming / Fishery

There are mainly 3 crops are grown by farmers of the Sanki village as follows, Sugarcane, and Cotton , water-chest nut are grown in the large pond of sanki village.

4.3.10 Physical Infrastructure Facilities - Manufacturing HUB / Ware Houses

There is crackers and fertilizer godown which stores the crackers and fertilizer respectively.
Also a industrial Park sarthee industries which has a different small and large scale industries in it.

4.3.11 Tourism development available in the village for attracting the tourist

There is no tourism spot in the village to attract the tourist except few temples.

4.4 Infrastructure Details

4.4.1 Drinking Water / Water Management Facilities

- For drinking water R.O. plant is installed in village with 1 overhead water tanks for distribution of water to the houses.
- The treated tap water is there in each house and also many of them has personal borings.
- The village has also its own R.O. treatment plant. It provides clean drinking water to all households by tap.

- As water is a basic need for all, panchayat itself manage the water supply for each household.
- Also has a irrigation canal and hand pumps

4.4.2 Drainage Network / Sanitation Facilities

Drainage facility is there in village from which 95% drainage area is covered. No proper treatment is given to drain water; only primary treatment is given before discharge. In whole village there is an underground drainage network and which is disposed at the creek near baleshwar.

4.4.3 Transportation & Road Network

The village is having very good road network facilities. There are different type of road cement concrete road and paver block road. The Road network of the village (village approach road, main roads, and internal streets) is made up of the dammar, mortar and black topped pucca materials. On streets paver blocks are placed.

The internal transport facilities like auto, taxi, etc. are not available in the village. All the houses have private vehicles like bike, bicycles. Few houses also have cars.

4.4.4 Housing condition

Most of the houses in the village are pukka houses. While some of the kuccha houses still exist in the village, their proportion is much less. About 15% houses in the village are kuccha houses. many houses are well furnished with exterior paint.

4.4.5 Social Infrastructure Facilities

Infrastructure assets such as rural roads, tracks, bridges, irrigation schemes, water supplies, schools, health centers and markets are needed in rural areas for the local population to fulfill their basic needs and live a social and economic productive life.They need ,

- Repairing of Aaganwadi
- Community hall restoration
- grain godown

4.4.6 Existing Condition &Maintenance of existing Public Infrastructures

In sanki village having aanganwadi but it is not in good condition its required maintenance. Panchayat building and primary school are also in good working condition Community hall required restoration and a safety wall is provided near periphery of wall.

4.4.7 Technology Mobile/ WIFI / Internet Usage Details

Most of the people of the village use mobile smart phones. The mobile signal strength is excellent in the village for almost all networks like Jio, Airtel, etc. and Private Wifi are also Available for villagers from their own. There is no public WI-FI spot located in the village. However, cellular data works quite well, without buffering.

4.4.8 Sports Activity as Gram Panchayat

Gram Panchayat does not hold any sports activity in the village. However, the kids and youth of the village play various games like gully cricket and other street games on the ground.

4.4.9 Socio-Cultural Facilities , Public Garden /Park/Playground /Pond/ Other Recreation Facilities

- The village have any playgrounds but not devloped so we will provide cricket ground in our part 2 design
- There is a pond 1,2,3 in village but pond 2,3 has no safety wall and retaining wall around it so it is designed in part-1.

4.4.10 Other Facilities

There are no any kinds of facilities like smart toilet-coin operated entry, footpath development, self cleansing, waterless public building, etc. in the sanki village.

4.4.11 Any other details

Suggestions for Sustainable Infrastructure Facilities & Repair &Maintenance of existing Public Infrastructures: The village street lights can be equipped by solar power

4.5 Existing Institution like - Village Administration – Detail Profile

4.5.1 BachatMandali

There is no any bachatmandali exist in our village.

4.5.2 DudhMandali

Milk dairy present in the village which produce all kind of products with small setup.

4.5.3 Mahilaforum

No such type of activity is take place in village.

4.5.4 Plantation for the Air Pollution

Yes, tree planation work exists in our village

4.5.5 Rain Water Harvesting - Waste Water Recycling

No work is done for rainwater harvesting

4.5.6 Agricultural Development

They use latest type of agricultural methods and pesticides for the growth of crops in the village

4.5.7 Any Other

No other type of forum or mandali is not there in village

Chapter: 5

Technical Options with Case Studies: (FOR ANY ONE TOPIC, Take a new concept design, prototype model with actual costing):

5.1 concept (civil):

5.1.1 Advance Sustainable construction techniques / Practices and Quantity Surveying:

India's construction sector is assessed at Rs.4000 billion or $100 billion. As a result of government spending, private investments as well as foreign direct investment, has made India number one of the top ten spending nations on construction in the world. We manufacture more than 250 million tons of cement and are second only to China. A recent report "Global Construction 2020", estimates that India will be the third largest global construction market after China and USA. In order to improve the standard of living of her population, one of the key hurdles that faces today's India is to overcome the challenge of infrastructure bottlenecks. Consequently the federal government has announced our 11th five years plan which allocates 9% of the GDP to infrastructure projects. The National Planning commission - an apex federal body has estimated an allocation of $515 billion which is equivalent to Rs.23 trillion to infrastructure sectors over the next five years. This includes construction of Roads, Highways, Airports, Bridges, Ports, Railways as well as water supply and sanitation amongst few others. The 12th five years plan projects an investment of 10% of the national GDP into infrastructure which equates to a staggering $1 trillion or equivalently Rs.45 trillion.

Drivers for Sustainability:

While India is preparing to tackle these growth plans with enthusiasm, it is imperative that the country should analysis and take into account the price that the future populations of the world and here will have to pay and the world in turn will have to pay, should this unprecedented growth take place without adequate thought to sustainability. Should we consume all our energy, materials, water resources without considering for the needs of our children and grandchildren, the future of the world and our nation is at peril. Obviously GHG emissions, climate change and sustainability are at stake. It is estimated that GHG emissions would increase from 2 billion tons to 6-7 billion tons of CO2 in 2030.

Some of us may question why India must slow down her pace of development and pay for the sins of already developed and industrialized Western nations. Clearly, the OECD or the industrialized countries must take the lead in mitigating climate change, reducing greenhouse gas

emissions, but also large developing countries such as India and China will also have to start to reduce their emissions over the next 20 to 30 years if we truly want to give our children a chance at a future. Developing countries with large emissions should have some responsibility, although differentiated and different from the industrialized world. While sustainable practices and products may be slightly unintuitive and perceived as counterproductive to the growth of GDP in the short-term, in the long- term, the future growth of the country depends on it. Growth that is not sustainable is not true growth.

Recommendations:

In mapping out sustainable practices that India must adopt a "cradle to grave" analysis is required. And for this we need to have a total approach than a patch work point system or a grade based certification system. In order to have a comprehensive plan for sustainable construction, every structure may be thought about based on the following parameters:

• Planning, design and specifications based on performance and service life

• Construction Practices

• Material Conservation and Selection

• Demolition and recycling

• Energy Conservation

1. Planning, Design and Specifications:

Structures in India are designed well however so far in most specifications, there is no reference to any service life or calculations thereof. To this effect, deeper study of various service life prediction models and calculations are essential. Specifications must to be performance based as opposed to their present form of being prescription based.

2. Construction Practices:

It is acknowledged that wastage in the construction industry is as high as 30%. That means at current valuation, we are talking about wastage to the tune of Rs.1200 billion or $27 billion in India. This is in itself a large, yet relatively simple and straight forward challenge to tackle. These wastages are activities that absorb resources, man hours and materials but create no value. Most developed countries have different forums / institutes / researchers / academic institutions for seeking solutions to mitigate these wastages and lean construction practices that emerged

have yielded encouraging. Lean construction is a "way to design production systems to minimize waste of materials, time and efforts in order to generate the maximum possible value". While some novel initiatives are being taken in some parts of India to adopt leaner construction practices, India does not have a fully focused lean construction forum. Creation of an industry consortium or lean construction forum may be a good beginning.

3. Material Conservation and Selection:

Concrete is the largest synthesized material which has a per capita consumption of 1.5 tons per annum in India. Presence of concrete is all pervading simply because it has the capacity to utilize locally available ingredients, develop adequate engineering properties for a variety of applications, easily adapt to any shape and size and has comparatively low initial and maintenance costs. While concrete not be as big of an energy consumer as structural steel, aluminum and glass; concrete and particularly cement still remains a major energy 'sink' due to its sheer volume of production and also environmentally unsustainable due to large quantities of CO2 evolution associated with its manufacture. Raw materials for cement manufacture include non-renewable natural resources like lime stone, aggregates, manufactured sands (fine aggregates), and so on. Hence the Indian concrete Industry needs to take a fresh look at these challenges. Some of the problems faced by Indian concrete industry towards achieving sustainability in concrete utilization are as follows:

Increase the use of fly ash and other cement substitutes; Use of manufactured sand ; Use of lightweight aggregates

4. Demolition and Recycling:

In India, the use of recycled aggregates has not been adequately explored. Reportedly, the construction and demolition waste has substantially increased as new super structures are being built on land after tearing down the smaller structures that previously existed. It is estimated that the construction industry in India generates about 10-12 million tons of waste annually. Projections for building materials requirement of the housing

sector indicate a shortage of aggregates of about 55,000 million cu. m. An additional 750 million cu.m. of aggregates would be required for achieving the targets of the road sector. Recycling of aggregate material from construction and demolition waste may reduce the demand-supply gap in both these sectors. There is also an increasing-acute shortage of dumping grounds and landfills particularly in metropolitan cities. SERC, Ghaziabad had taken up a pilot R&D project on Recycling and Reuse of Demolition and Construction Wastes in Concrete for Low Rise and Low Cost Buildings in mid-nineties with the aim of developing techniques/methodologies for use of recycled aggregate concrete in construction. The experimental investigations were carried out in Mat Science laboratory and Institutes around Delhi/GZB to evaluate the mechanical properties and durability parameters of recycled aggregate concrete made with recycled coarse aggregate collected from different sources. Also, the suitability in construction of buildings has been studied.

5. Energy Conservation:

Since sources of good quality, aggregates are fast depleting, the concrete industry in India needs to prepare itself to use locally available 'marginal' aggregates. The use of local materials helps reduce the carbon footprint associated with transport. Thus, from sustainability angle, the emphasis should be placed on using locally-available aggregates, even if there are small deficiencies in their quality. It has been amply demonstrated that desired properties of concrete can be obtained by intelligent blending of available aggregates with crushed sand, inert fillers, supplementary cementitious materials and chemical admixtures. Another important issue is that river sand and other construction materials are usually transported by road. India has a well-developed and efficient rail and water transport system that need to be leveraged by the construction industry. This is not only more sustainable option but also most cost effective.

Conclusion:

➢ India is an astoundingly growing economy and hence the pressure on the use of natural resources is very heavy.

➢There is an awakening about the words durability and then sustainability.

➢Though the durability is understood to a point the real meaning and importance of sustainability is not fully comprehended by engineering fraternity as well as planners.

➢Some sporadic efforts are carried out in the form of very repetitive academic experimentation; however, these efforts are in extreme primitive conditions.

➢ Industry has not opened to this "Sustainability aspect" proactively as they are busy joining the band wagon of growth machine.

➢ Federal authorities also are not well informed and hence not equipped to adopt 'Sustainability initiative'.

➢ Also use of renewable energy and resources is not much sought after option and not given due importance as the initial costs are high.

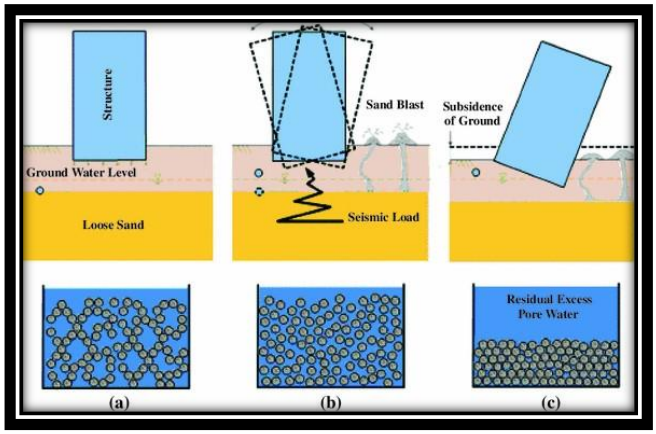
➢At the same time, there is definite internal feeling in all that something is definitely needed to be done for next generation. Typically not to leave them with depleted resources.

➢At the behest of ACI international – India Chapter of ACI has organized couple of international conferences on sustainability along with the help of other organizations and Institutions.

➢ But this effort to create and spread awareness should be all pervasive. The proactive participation of all the institutions, professional bodies, academicians, industry as well as firm patronage and participation of government is extremely essential.

➢ 'Lean Concrete' and 'Reduce Wastage' initiatives in the industry are very necessary. ➢ India chapter of ACI has decided to take the lead role in this initiative by forming "JSI" like efforts in India. It was suggested by late President Dick Stehly to the chapter after he witnessed the capability of chapter to galvanize the support and participation of many in the recent international conference on "Sustainability".

5.1.2 Soil Liquefaction:



Soil liquefaction occurs when a saturated or partially saturated soil substantially loses strength and stiffness in response to an applied stress such as shaking during an earthquake or other sudden change in stress condition, in which material that is ordinarily a solid behaves like a liquid.

In soil mechanics, the term "liquefied" was first used by Allen Hazen in reference to the

1918 failure of the Calaveras Dam in California. He described the mechanism of flow liquefaction of the embankment dam as: If the pressure of the water in the pores is great enough to carry all the load, it will have the effect of holding the particles apart and of producing a condition that is practically equivalent to that of quicksand… the initial movement of some part of the material might result in accumulating pressure, first on one point, and then on another, successively, as the early points of concentration were liquefied.

Type of soil causes liquefaction: Poorly drained fine-grained soils such as sandy, silty, and gravelly soils are the most susceptible to liquefaction.

5.1.3 Sustainable Sanitation:

Sustainable sanitation is a sanitation system designed to meet certain criteria and to work well over the long-term. Sustainable sanitation systems consider the entire "sanitation value chain", from the experience of the user, excreta and wastewater collection methods, transportation or conveyance of waste, treatment, and reuse or disposal. The Sustainable Sanitation Alliance (SuSanA) includes five features (or criteria) in its definition of "sustainable sanitation": Systems need to be economically and socially acceptable, technically and institutionally appropriate and protect the environment and natural resources. The purpose of sustainable sanitation is the same as sanitation in general: to protect human health. However, "sustainable sanitation" attends to all processes of the system: This includes methods of collecting, transporting, treating and the disposal (or reuse) of waste.

5.1.4 Transport Infrastructure / system:

Transport infrastructure consists of the fixed installations necessary for transport and includes roads, railways, airways, waterways, and terminals.

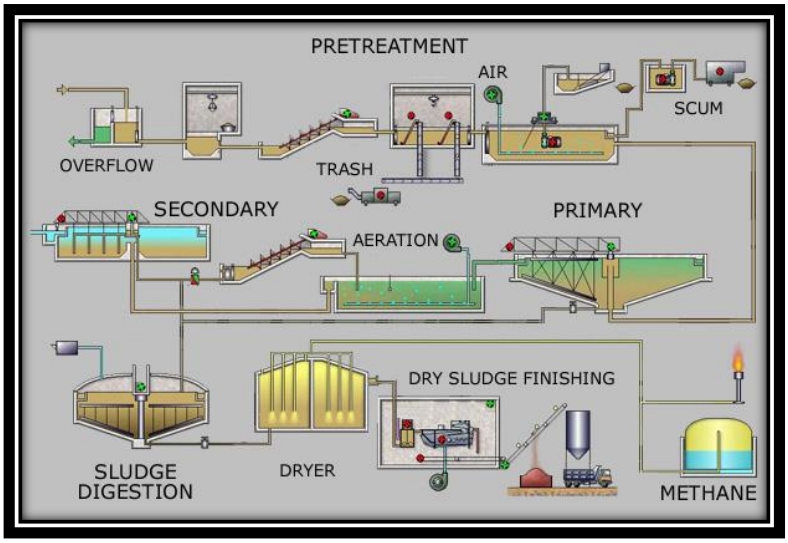
Transport is vital to the well-functioning of economic activities and a key to ensuring social well-being and cohesion of populations. Transport ensures everyday mobility of people and is crucial to the production and distribution of goods. Adequate infrastructure is a fundamental precondition for transport systems. In their endeavour to facilitate transport, however, decision-makers in governments and international organizations face difficult challenges. These include

the existence of physical barriers or hindrances, such as insufficient or inadequate transport infrastructures, bottlenecks and missing links, as well as lack of funds to remove them. Solving these problems is not an easy task. It requires action on the part of the governments concerned, actions that are coordinated with other governments at international level

5.1.5 Sewage treatment plant:

Sewage treatment plant is a plant where waste water is treated. Sewage treatment is the process of removing contaminants from municipal wastewater, containing mainly household sewage plus some industrial wastewater. Physical, chemical, and biological processes are used to remove contaminants and produce treated wastewater (or treated effluent) that is safe enough for release into the environment.

A by-product of sewage treatment is a semi-solid waste or slurry, called sewage sludge. The sludge has to undergo further treatment before being suitable for disposal or application to land. Sewage treatment may also be referred to as wastewater treatment. However, the latter is a broader term that can also refer to industrial wastewater. For most cities, the sewer system will also carry a proportion of industrial effluent to the sewage treatment plant that has usually received pre-treatment at the factories to reduce the pollutant load. If the sewer system is a combined sewer, then it will also carry urban runoff (stormwater) to the sewage treatment plant. Sewage water can travel towards treatment plants via piping and in a flow aided by gravity and pumps. The first part of the filtration of sewage typically includes a bar screen to filter solids and large objects that are then collected in dumpsters and disposed of in landfills. Fat and grease are also removed before the primary treatment of sewage.



The term "sewage treatment plant" (or "sewage treatment works" in some countries) is nowadays often replaced with the term wastewater treatment plant or wastewater treatment station. Sewage can be treated close to where the sewage is created, which may be called a "decentralized" system or even an "on-site" system (in septic tanks, biofilters or aerobic treatment systems). Alternatively, sewage can be collected and transported by a network of pipes and pump stations to a municipal treatment plant. This is called a "centralized" system (see also sewerage and pipes and infrastructure).

5.2 Technical case study on "Gift City":

A Case Study on Sustainability: GIFT City

GIFT is planned as a financial Central Business District (CBD) between Ahmadabad and Gandhinagar as a Greenfield development. It is designed as a hub for the global financial services sector. More particularly, state-of-the-art connectivity, infrastructure and transportation access have been integrated into the design of the city.

The project regenerates the area as high-quality, mixed use district of residential, commercial and open space facilities that optimize land and real estate values. It is characterized to be a Central Business District (CBD) developed on "Smart and Sustainable Development" principle thereby acting as a motivation for overall development of the region.

Master Plan GIFT Master Plan reflects a sophisticated planning approach that integrates the intended program into the existing context of both the site and the region. The GIFT development is expected to become a contemporary model development in India, advancing the ideas of sustainability and ecology. GIFT, envisaged as an Eco-City, and will serve as the Vibrant Hub of Western India and as a habitat demonstrating business oriented, environmentally-sensitive growth

Development The primary focus of the development is the commercial development. The major space is being dedicated to the offices for business segments of national and international services, retail, community center, hotels etc. The emphasis is also given towards the housing facilities for the employees working at GIFT. The services that are offered at GIFT are of highest quality and comprehensive. It is being planned with good judgment in terms of the latest technology and global sustainability. GIFT is incorporated with the internal infrastructures such as transportation, water supply & its treatment, integrated solid waste management by advanced waste collection and transportation system, fire-fighting system information & communication technology and control center.

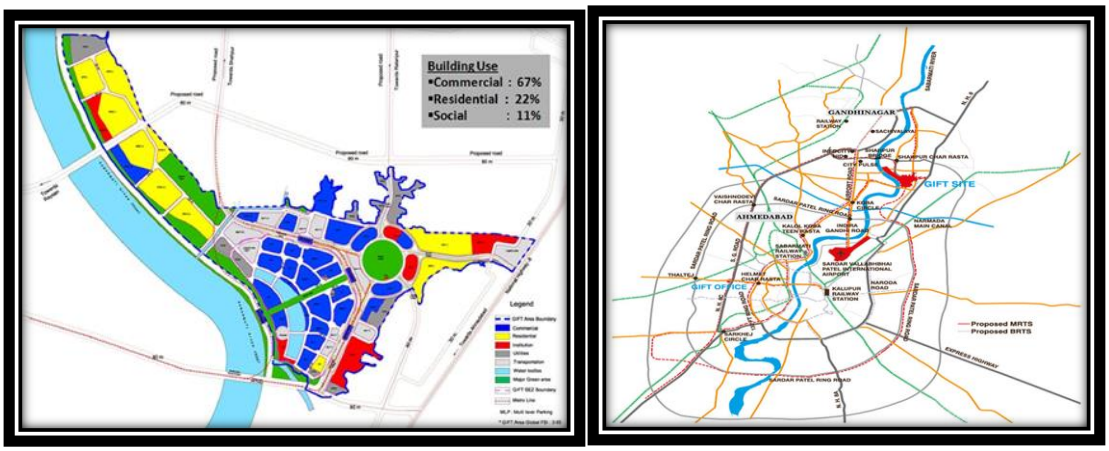


Fig- 28 Master plan of GIFT Fig- 29 location of gift

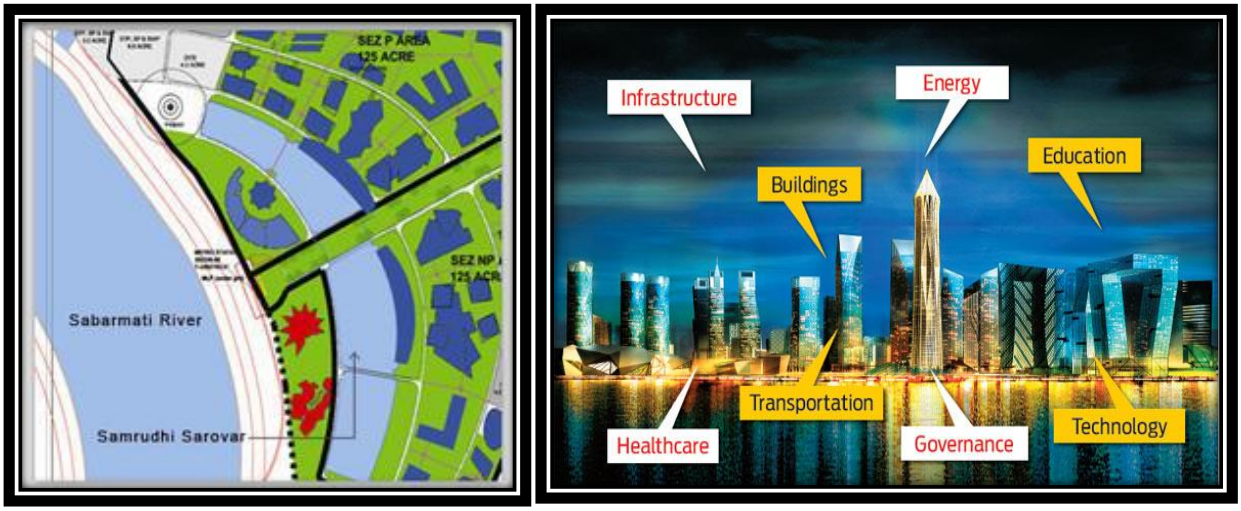


Fig-30 samruddhisarovarFig-31 facility of gift

III. SUSTAINABILITY MEASURES

GIFT has incorporated in itself the various intelligent and green measures, which contribute to the sustainable development of this city. The different measures undertaken are elaborated. A.Land use It had been planned based on high density development, considering that land is scarce resource. The Global Floor Space Index of 3.65 has been implemented in the entire GIFT area to achieve the envisaged density as part of its overall development. The figures pertaining to the land use is shown. (See Table-I).

B. Green Building Initiatives Green Building (also known as sustainable building) refers to both a structure and the using of processes that are environmentally responsible and resource efficient throughout a buildings life cycle: from design, construction, operation, maintenance, renovation, and demolition. It also has incorporated green and sustainability measures in terms of : a) reduction of wastage of energy, which will result in reduced energy bills, b) Construction of sky gardens or roof-top gardens, c) Increase in usage of non-conventional energy sources such as solar power, and also rain water harvesting, d) Planning and design according to climate, e) Other Green Building parameters such as structural design efficiency, materials efficiency, materials efficiency, indoor environmental quality enhancement, operations & maintenance

Optimization and waste reduction. Another important aspect, which GIFT has implemented is the installation of district cooling system, which is a system of distributing heat generated in a centralized

Location for residential and commercial heating requirements, such as space heating and water heating. The heat is obtained from burning of fossil fuels, but increasing use of biomass, geothermal heating, and central solar heating is also being done. It has also been observed that district heating with combined heat and power is the cheapest way of cutting carbon emissions, and has one of the lowest carbon footprints of all fossil fuel generation plants.

C. Landscaping Over 34% of the land area in GIFT has been utilized as green and open spaces. This has resulted in the major landscaping of those areas which is ecologically and aesthetically matured. Planting of evergreen , flowering trees, columnar spread trees, ground-cover or lawn

area, and continuous shrub masses, as well as the construction of landscape terraces, has also been done to accenture views where desirable.

D. Water Supply and Sewerage Systems The water requirement for the GIFT city is 20 MGD.The water sources from which GIFT draws its water are (a) Narmada Main Canal, (b) Recycling and reuse of waste water, and (c) Rainwater Harvesting. This has resulted in the city receiving 24x7 water supply. The concept of "zero discharge city"has been implemented, in which the waste water is treated and reused, which results in maximum utilization of water

the construction of three barrages on the Sabarmati River, called SamruddhiSarovar. The waterfront is 1km in length and 7m in depth, with its width varying from 82 m to 160 m. It is designed for the storage of drinking water, which can last for upto 15 days.

E. Solid Waste Management The projected waste quantity of GIFT is 488 TPD. It aims at minimizing the impact on environment, human intervetion, space requirement, and less impact on health hazard. The GIFT city has automatic collection and transportation system. In this computer controlled system, the waste is being thrown into the disposal chute, and the waste is sucked through pipes at speed of 90 km/hr. The Plasma Gasification Technology is used for the waste treatment. F. Transportation The transportation is planned in such a way that it will encourage the reduction of greenhouse gas emissions from the vehicles in GIFT. It aims at zero accidents. G. Energy efficiency The efficiency are to be acquired by cooling systems and solar plants. The cooling systems facilitates in less energy consumption, more reliability, less impact on environment. A 10 MW solar plant has been installed within the city on pilot study. Many more plants of such capacities will be installed in near possible future as the city develops.

IV. CONCLUSIONS

As far as sustainability is concerned, GIFT reflects a sophisticated planning approach to ensure integration of Environmental concerns and Green Buildings, optimum usage of energy, water and construction materials. The project regenerates the area as high-quality, mixed use district of commercial, residential and open space facilities that optimize land and real estate values. In this case study, we have seen the various methods and technologies which have been implemented and utilised in GIFT for the sustainable development of this project. Due to its efforts, GIFT has been presented with multiple awards and honours, such as "Smart City of the Future" b Cisco Technology Awards, 2014 and many others. GIFT stands as a model for successful sustainable development of industrial and commericial areas, and it will be seen in the future as a model, based on which the development of the other smart cities will take place.

Chapter : 6

Swachh Bharat Abhiyan (clean India)

Swachh Bharat Mission (SBM), Swachh Bharat Abhiyan (SBA), or Clean India Mission## It is a country-wide campaign initiated by the Government of India in 2014 to eliminate open defecation and improve solid waste management (SWM). Phase 1 of the mission lasted till October 2019. Phase 2 will be implemented between 2020-21 and 2024-25.

Initiated by the Government of India, the mission aimed to achieve an "open-defecation free" (ODF) India by 2 October 2019, the 150th anniversary of the birth of Mahatma Gandhi. The objectives of the first phase of the mission also included eradication of manual scavenging, generating awareness and bringing about a behavior change regarding sanitation practices, and augmentation of capacity at the local level. The second phase of the mission aims to sustain the open defecation free status and improve the management of solid and liquid waste. The mission is aimed at progressing towards target 6.2 of the Sustainable Development Goals Number 6 established by the United Nations in 2015.

The campaign's official name is in Hindi. In English, it translates to "Clean India Mission". The campaign was officially launched on 2 October 2014 at Rajghat, New Delhi by Prime Minister Narendra Modi. It is India's largest cleanliness drive to date with three million government employees and students from all parts of India participating in 4,043 cities, towns, and rural communities. In rural areas "SBM - Gramin" was financed and monitored through the Ministry of Drinking Water and Sanitation; whereas "SBM - urban" was overseen by the Ministry of Housing and Urban Affairs.

As part of the campaign, volunteers, known as Swachhagrahis, or "Ambassadors of cleanliness", promoted indoor plumbing and community approaches to sanitation (CAS) at the village level. Other activities included national real-time monitoring and updates from non-governmental organizations (NGOs) such as The Ugly Indian, Waste Warriors, and Swachh Pune (Solid Waste Collection and Handling).

The government provided subsidy for construction of nearly 110 million toilets between 2014 and 2019, although many Indians especially in rural areas choose to not use them. The campaign was criticized for using coercive approaches to force people to use toilets. Many households

were threatened with a loss of benefits such as access to electricity or food entitlements through the public distribution system.

6.1 Swachhta needed in SANKI village -Existing Situation:

We have done one survey on existing condition of village regarding Swachhta. The people are maintaining cleanliness of the village but in some streets there is no Swachhta because there are animal and their waste, mud, etc. The village pond has to need a proper maintenance. Other than these there are clean streets, main road and approach road.

6.2 Guidelines – Implementation in sanki village with photograph

According to talati-sarpanch and villagers, the people are cleaning their nearby area regularly and collect that waste and dispose it out of Village and burnt near the fire godown dump site.

Fig-31 dump site of sanki village

6.3Activities done by students for sanki village with photograph

- We have done small campaign about Swachhta and aware them about disposal of waste and problems created with the waste to their environment.

Chapter : 7

Village Condition due to covid-19

With respect to COVID 19 pandemic, Ministry of Panchayati Raj, Government of India in close collaboration with State Governments has taken various initiatives. Close consultation and guidance of the State as well as District authorities is being maintained to ensure that lock down conditions are not violated and norms of social distancing are scrupulously followed to contain the spread of the disease. India has overtaken Brazil and become the second-worst affected country in the world by the coronavirus pandemic, with more than 4 million cases. COVID-19 had mostly remained in India's cities, but the disease is now spreading to rural India – an area with over 850 million people and far worse healthcare. The reason for this shift appears to be migrant workers who have been returning to their villages since lockdown was eased at the end of June.

The medical response to stop the spread and treat those infected has been inadequate, according to media reports. With one trained doctor for every 1,497 people, against the World Health Organization recommended one per 1,000, and public health expenditure for 2018 at just 1.3% of GDP, India faces an uphill struggle in dealing with the pandemic. While two-thirds of India's population lives in rural areas, there are almost four times as many health workers per person in cities. Most rural communities rely on untrained health workers.

Over two-thirds of these rural health providers have no formal medical training, but remain the only option of medical support for most of the rural population.

7.1 Taken steps in allocated village related to existing situation with photograph

- In Sanki village as per the sarpach and talati they told us that they hold the public for quarantine onthe primary school building, most of cases they told the villagers to stay forhomequarantinebecausethereisalimitedspaceforquarantinesotheyprefer homequarantine.
- Maintain a safe distance from anyone who is coughing or sneezing.
- Wear a mask when physical distancing is not possible.
- Don't touch your eyes, nose or mouth.
- Cover your nose and mouth with your bent elbow or a tissue when you cough or sneeze.

7.2 Activities Done by Students for allocated village Clean with Photograph

- Due to corona we had not much interact with the villagers to avoid corona so we hadmaintained social distancing so that's why we didn't do much work for corona safety.

- We have taken door to door awareness with the village people because of the covid-19guidelines to prevent the spreading of corona virus.

- We have notice the behavior of the villagers towards us and it was not quit good because they were afraid of us because we were outsiders from the village.

- Due to waste thrown in village here and there, unhygienic condition was also there so we told them how to get over with this waste using dustbin at every 500m in the villageto throw garbage and maintain the proper hygiene and sanitation.

7.3 Any other steps taken by the students / villagers

Awareness about covid-19 transmission and protective measures

- Clean your hands often, Keep 2mtrs distance socially.
- Avoid touching eyes, nose, mouth.
- Limit the social gathering at crowded place.
- Follow social distancing at hand pump, shops, etc.

- we have notice that due to lockdown in school's students of village were not able to study properly because they don't have any proper instrument for online teaching classes.
- We have given them the advice how they can teach student in classroom without breaking any corona guidelines and suggest them to take 10 students in each class from same standard and take alternate lecture for them.
- Due to corona, people were afraid of us somehow and not giving us the proper information and was not ready to take photograph with us that's why we don't have photo of us with villagers.
- We have gather information about village corona patient and it was quite a relief that there is no any corona patient till now in kosadi village or nearby village.
- We don't have photos because they were afraid of us that maybe we are infected and don't help us in more work to do.

Chapter: 8

Sustainable Design Planning Proposal (Prototype Design) - Part- I (Scenario / Existing Situation / Proposed Design in Auto cad / Recapitulation Sheet / Measurement Sheet / Abstract Sheet / Sustainability of Proposal / Any other software):

8.1 Design Proposals: Observation & brief write up about each design from 8.1.1 to 8.1.6

Social Design: Aaganwadi

Proposed new aaganwadi is to be designed because of existing aaganwadi is so congested and damaged.

Sustainable Design: Pond and Rainwater harvesting system

Community hall is a public location where members of a community gather for group activities, events, festivals and social purpose. They may sometimes be open for whole community or for a specialized group example Mahilamandal hall. A community hall of village generally consists of a hall , storage or kitchen area and washroom

Physical design: Pharmacy Store and Library

In the Sanki village there is no any PHC or dispensary or private clinic or pharmacy store. So according to the feedback given by the villagers, one dispensary or pharmacy store should be there in the village. The villagers have to go in Jarod for any kind of health or medical facility. So that we have designed one Pharmacy store for the urgent requirement of medicines for the villagers. And a library for the betterment of the student education

Heritage Village Design: Entrance Gate

The Sanki village has no main entrance gate at the village approach road. So that we have designed the village entrance gate as heritage village design.

8.1.1 Aaganwadi

There is a small aaganwadi existing in village, on main road connecting NH-48 from karan village to bagumra village.
Aaganwadi is constructed in the compound of government primary school
The aaganwadi have a capacity of 20 no. of candidates. But total number of candidates is 40.

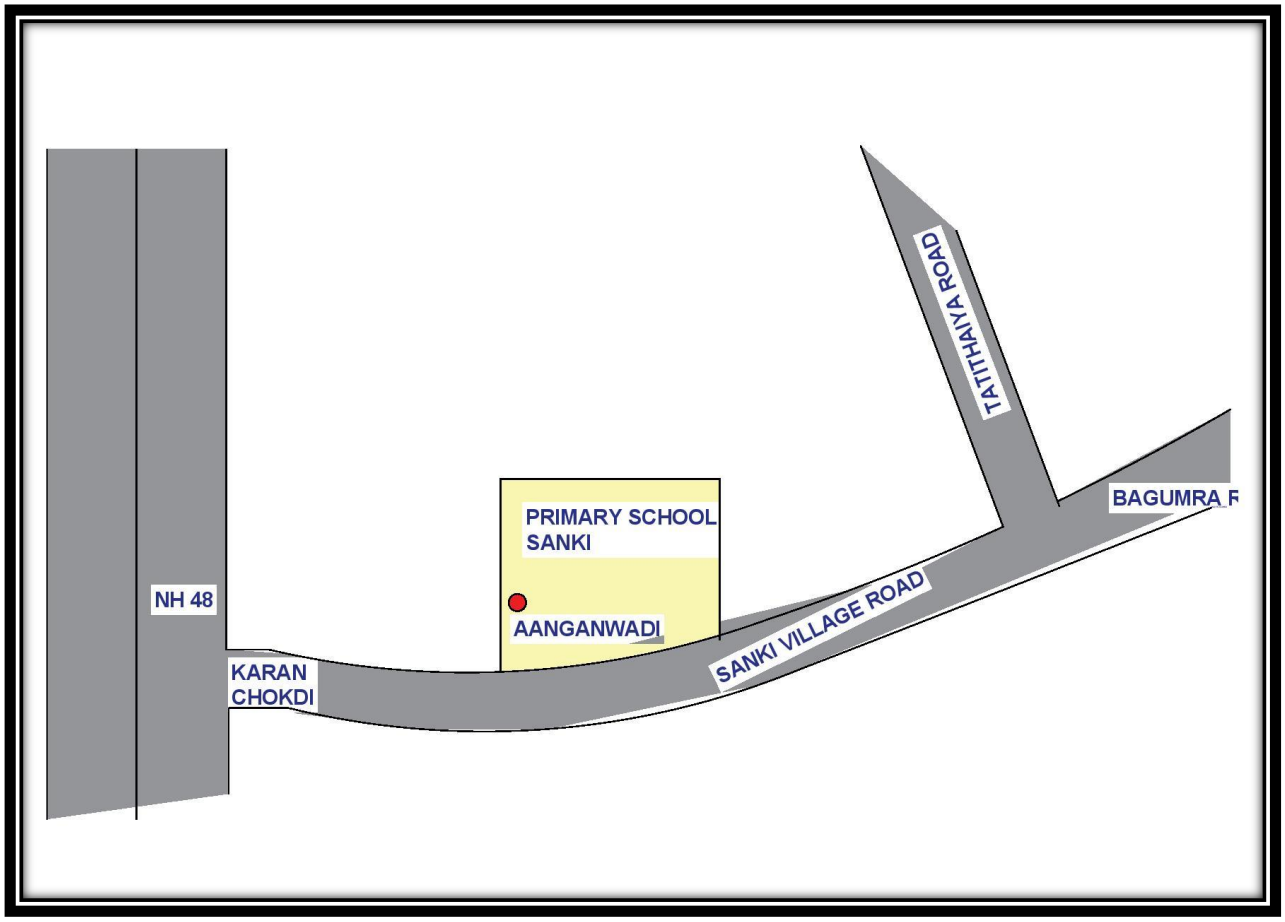


Fig-33 Key Plan of aaganwadi

Size of existing aaganwadi:-

- Size: - 13’9” x 22’
- It has one classroom, kitchen, toilet

Size of Classroom: - 12’-3” x 11’9”
Kitchen: - 12’-3” x 8’
Toilet: - 5’ x 3’

- It has a built-up area of 1300sq.ft. (20’ x 65’) for future construction work in which 302.5sq.ft. Area is already covered with existing aaganwadi.

Fig.34 - Measuring Existing Aaganwadi

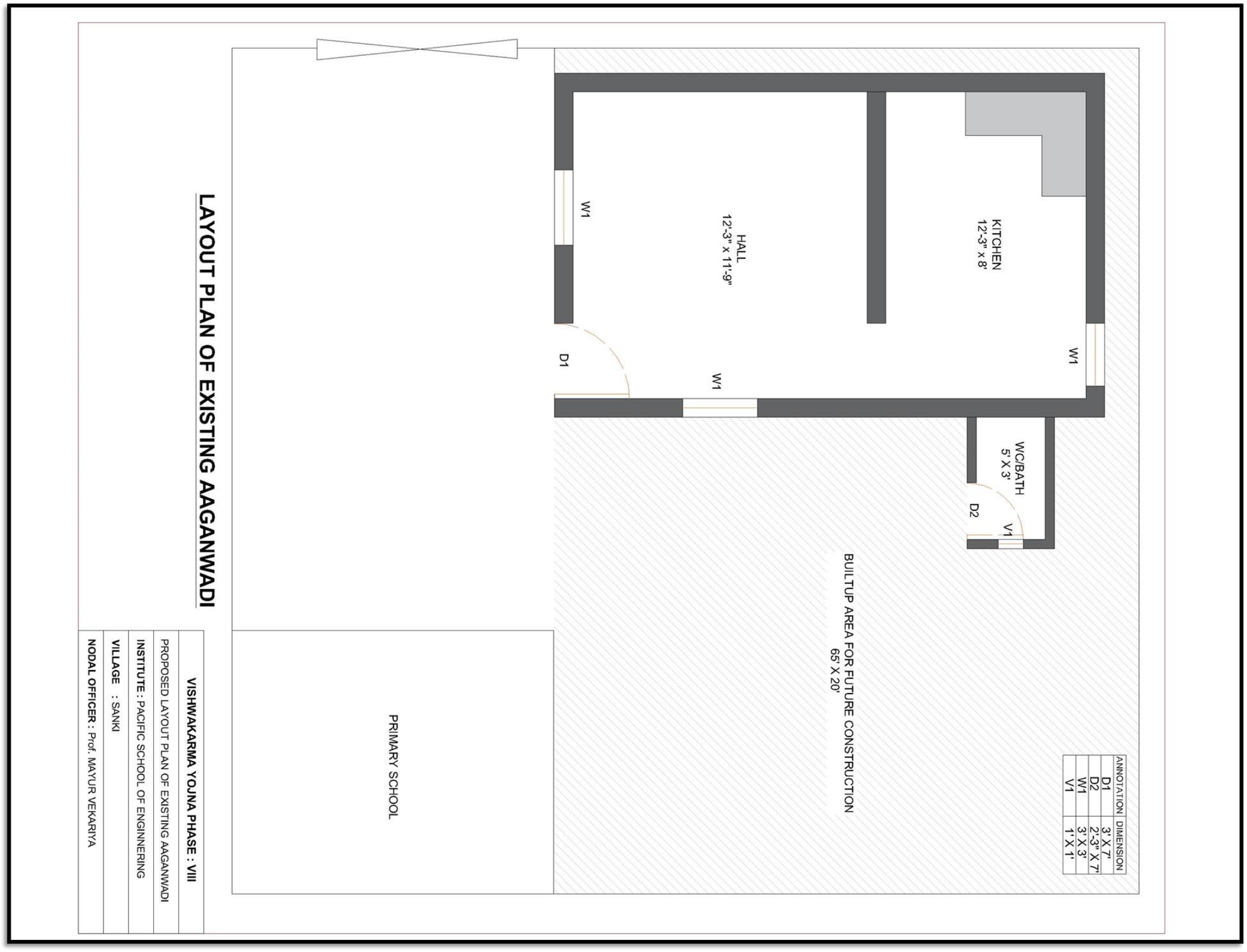


Fig.35 - Layout plan of existing aaganwadi

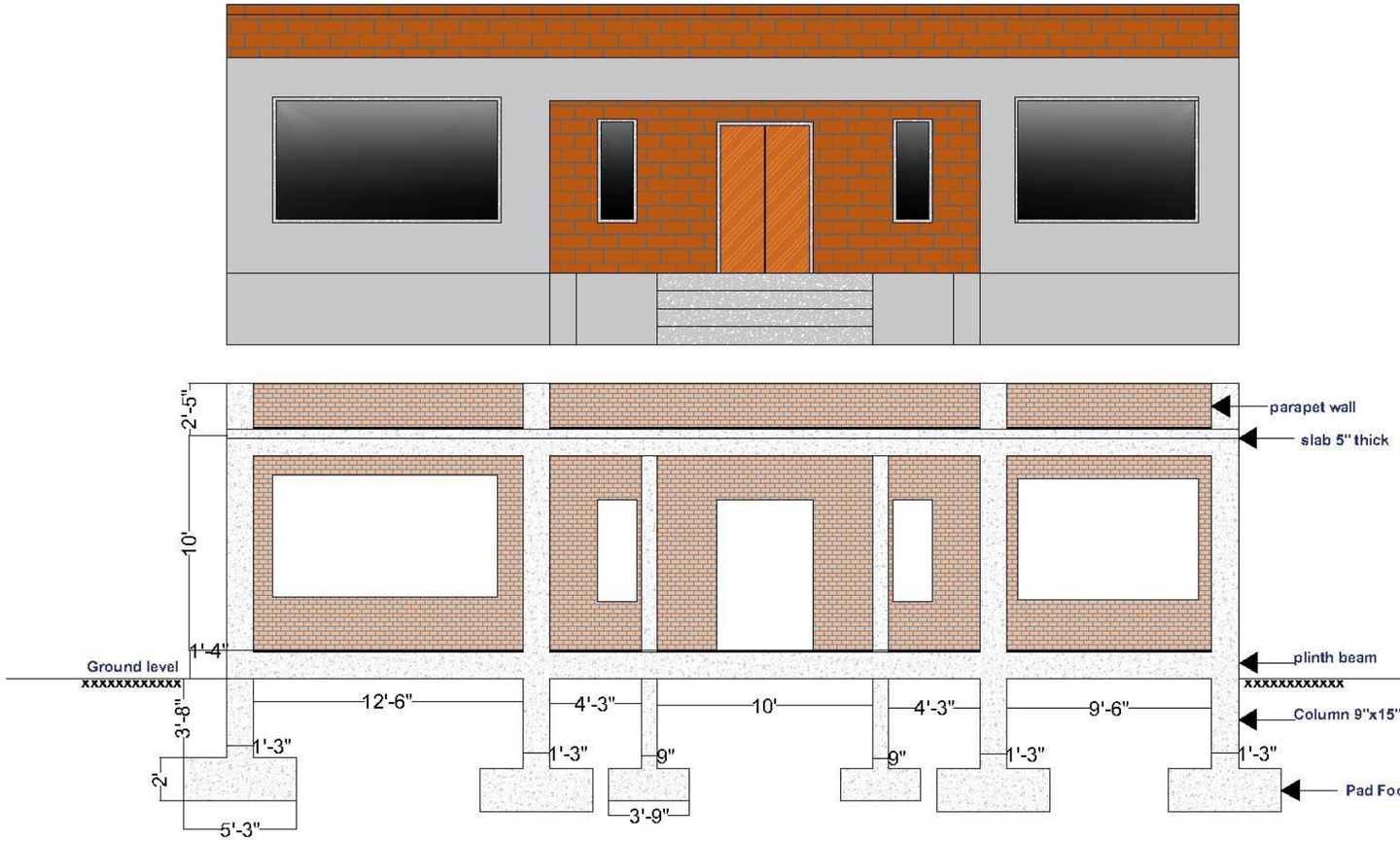


Fig.36– elevation/sectional plan of proposed new aaganwadi

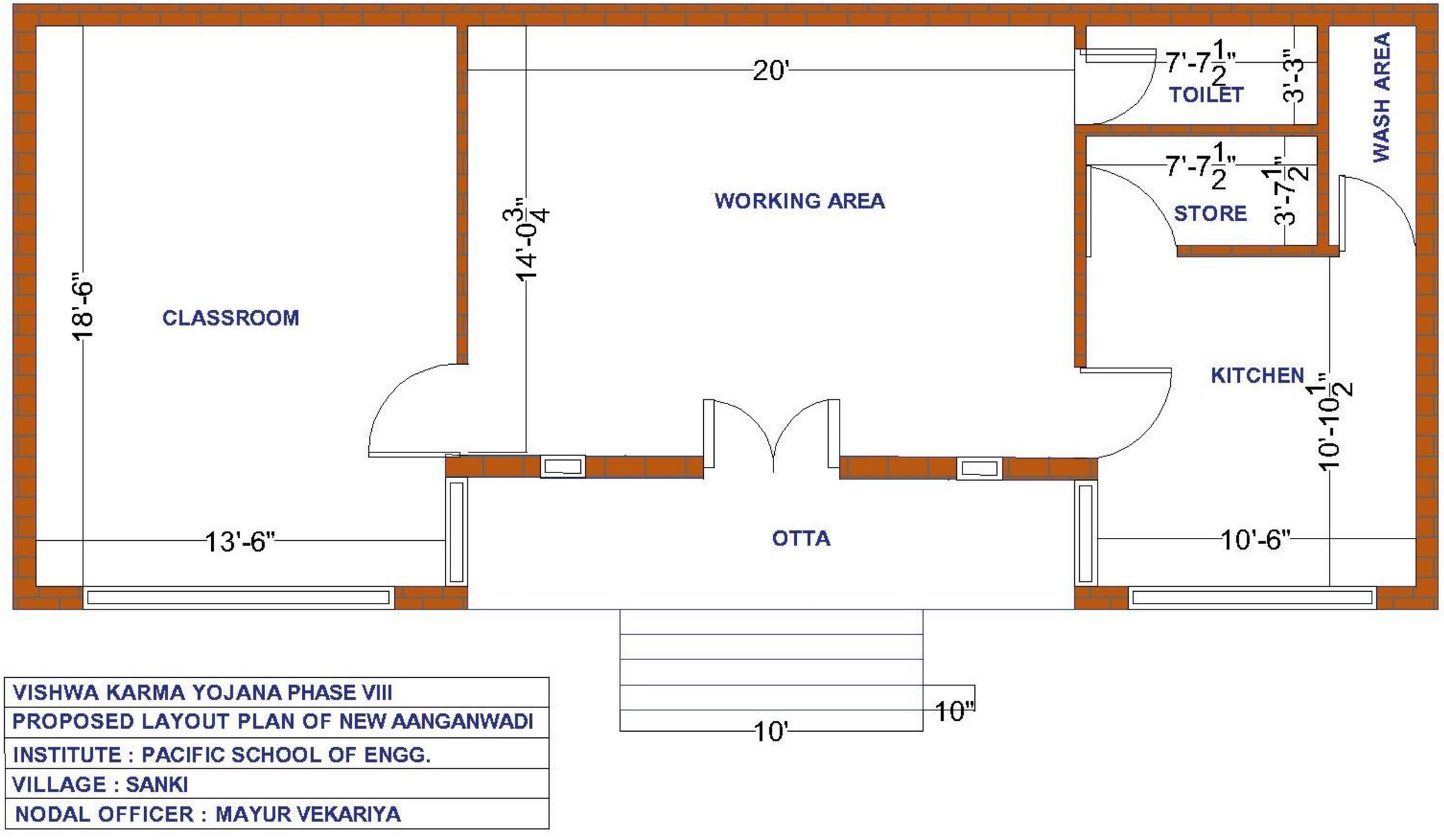


Fig.38–plan of proposed new aaganwadi

About existing aaganwadi:-

- The aaganwadi is built in year 1998 by taluka panchayat.

- Now the life of aaganwadi is being 22 years approx and the structure is totally damaged and water is leaked from roof of aaganwadi, so during monsoon situation is so critical for candidates and children's to sit in aaganwadi.

- The children in this aaganwadi are suffering from many problems

- Now days the sanki village area is in developing by real-estate developers for a residential area. And industrial area, due to this the population is increasing day by day. In 2011, the population was about 1000. But now it's somewhat increased to 2500. And still counting.

- Till 2018, the aaganwadi has 20 students studying and total 48 children for polio and other medical scheme. But today, there are 40+ students studying and about 100+ children for medical scheme.

- So we need to propose new aaganwadi for the betterment of children in village with the facilities like: - class room, hall and a kitchen with a drinking water and toilet facility. Class room should be well painted by the artist. Some racks and cupboards should also be furnished

Construction of existing aaganwadi:-

- It is constructed with the brick wall and a roof is covered with corrugated cement sheet with MS pipe truss support.

material to be used in the proposed design of the aaganwadi:-

Sr. No.	Materials
01	Cement
02	Sand
03	Aggregates
04	Steel
05	Cool Wall blocks

Sr. No.	Item Description	Nos	Length (m)	Width (m)	Height/ Dpthm)	Quantity (m^3)	Remarks
A	**Brick Masonry (9")**						
	i. Back Wall	01	15	0.230	3.04	10.49	
	ii. Side Wall	02	5.26	0.230	3.04	7.36	
	iii. Front Wall	01	15	0.230	3.04	10.49	
	iv. Plinth Wall A	02	15	0.230	0.610	4.20	
	v. Plinth Wall B	02	5.26	0.230	0.610	1.48	
	Brick Masonry (4.5")						
	i. Inner Wall A	02	5.26	0.115	3.04	3.68	
	ii. Inner Wall B	02	2.45	0.115	3.04	1.71	
	iii. Inner Wall C	01	2.13	0.115	3.04	0.74	
					Total	**40.15**	
	Deduct						
	i. Main Door	01	1.21	0.230	2.13	0.60	
	ii. Internal Door	02	0.91	0.115	2.13	0.44	
	iii. Internal Door	03	0.83	0.115	2.13	0.61	
	iv. Windows	02	1.83	0.230	1.83	1.54	
					Total	**3.19**	
B	**Plastering Work**						
	i. Back Wall	01	15	-	3.04	45.6	
	ii. Side Wall	02	5.26	-	3.04	32	
	iii. Front Wall	01	15	-	3.04	45.6	
	iv. Plinth Wall A	02	15	-	0.610	18.3	
	v. Plinth Wall B	02	5.26	-	0.610	6.42	
	vi. Inner Wall A	02	5.26	-	3.04	32	
	vii. Inner Wall B	02	2.45	-	3.04	14.9	
	viii. Inner Wall C	01	2.13	-	3.04	6.47	
					Total	**201.29**	
C	Plinth Filling	01	15	5.26	0.610	48.12	
D	Plinth Slab	01	15	5.26	0.125	9.86	
E	Roof Slab	01	15	5.26	0.125	9.86	
F	Staircase	03	3.04	0.255	0.204	0.47	
G	Main Door	01	1.21		2.13	2.58	Sq. Ft.
	Internal Door	02	0.91		2.13	3.87	Sq. Ft.
	Internal Door	03	0.83		2.13	5.30	Sq. Ft.
H	Windows	02	1.83		1.83	6.70	Sq. Ft.

Table 9 MEASUREMENT SHEET (AAGANWADI)

Sr. No.	Item Description	Quantity	Rate	Per	Amount
A	Brick Masonry	36.96	6800	m^3	251328
B	Plastering Work	201.29	900	m^2	181161
C	Plinth Filling	48.12	875	m^3	42105
D	Plinth Slab	9.86	3500	m^3	34510
E	Roof Slab	9.86	3500	m^3	34510
F	Staircase	0.47	2800	m^3	1316
G	Main Door	2.58	550	Sq. Ft.	1419
	Internal Door	3.87	475	Sq. Ft.	1838.25
	Internal Door	5.30	475	Sq. Ft.	2517.5
	Windows	6.70	475	Sq. Ft.	3182.5
				TOTAL	**5,53,887.25/-**

Table 10 ABSTRACT SHEET (AAGANWADI)

8.1.1 Pond

The pond of village has approximately 3 hectare of area.

There are 3 ponds in a village as shown in fig.

Pond no.1 is located on the main junction of the village which is about 1.86 hectare land and its periphery is about 0.6km this pond is well located with three side road. This pond is about 15feet in depth.

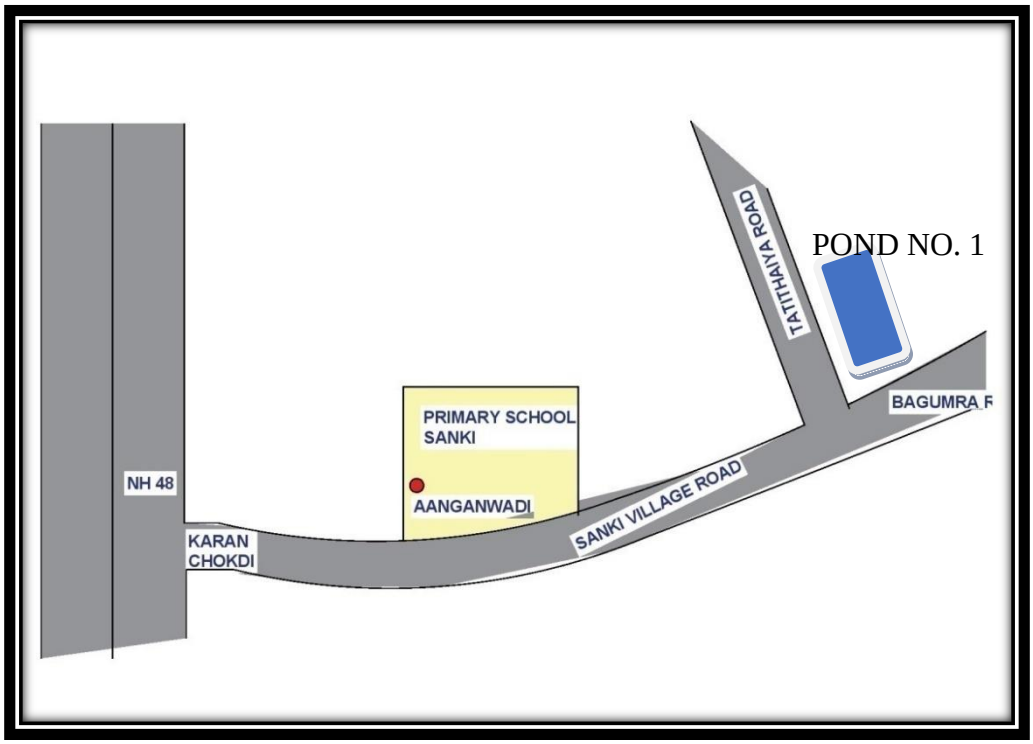


Fig.39 Key Plan of Pond 1

- As this pond is located on the residence area and connecting road major sides this can be developed as a recreational area and so the village can also get a good tourism spot.
- Nowadays in the pond the cultivation of water chestnut is carried out by some peoples.

Fig.40 Measurement of Pond 1

DATA ABOUT POND 2-3

This pond is located in the interior part of the village. These ponds are small in size and dug about 8months ago.

This both pond combined has an area of 1 hectare its depth is about 15-20 feet

As these are located in residential area these pond need some safety and a retaining wall in its periphery. There is no retaining wall is provided on its periphery sotaking the safety of villagers this is to be also designed.

Periphery of the pond 2-3 is about 750mtr and depth of 12-15 feet and that need to be a safety and retaining wall on its periphery

Fig.42 Actual Site of pond 2-3

The Periphery of pond is about 300 R.MT

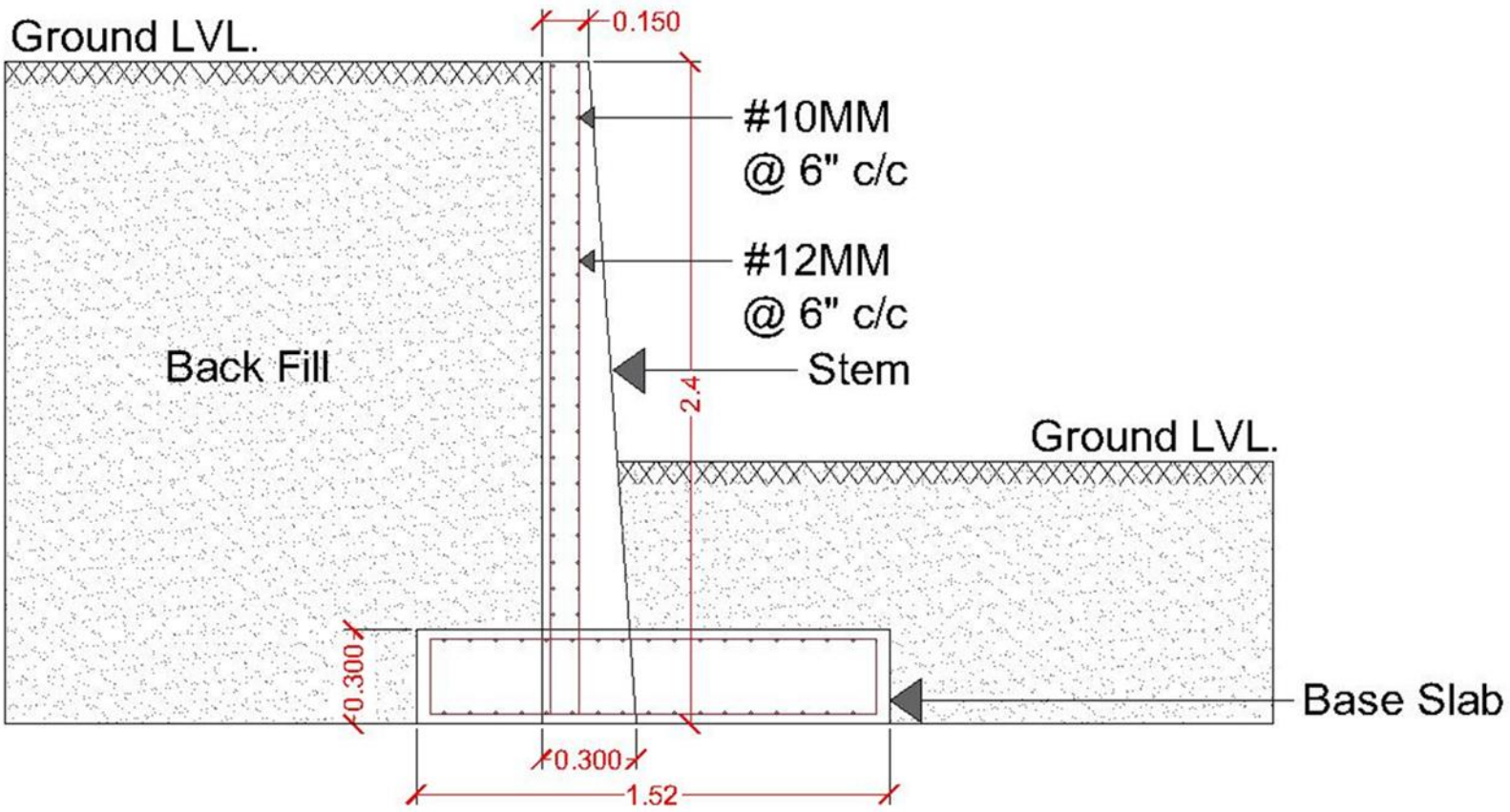
Considering the depth of wall – 2.4mt.
Total volume of retaining wall = 232 m3

Thickness of stem should be 12”
Base slab should be 5’ breath and 12” thick

Therefore, measurement of retaining structure around the pond:-

For stem,
Cement = 738 bag
Sand = 57645 m3
Aggregate= 119132 m3
Steel = 12mm, 2670
10mm, 1860
Binding wire = 45kg

For base slab,
Cement = 1120 bag
Sand = 87582 m3
Aggregate= 181003 m3
Steel = 12mm, 2662kg
10mm, 1488kg
Binding wire = 42kg



RETAINING WALL

VISHWAKARMA YOJNA PHASE : VIII
PROPOSED RETAINING WALL
INSTITUTE : PACIFIC SCHOOL OF ENGINNERING
VILLAGE : SANKI
NODAL OFFICER : Prof. MAYUR VEKARIYA

8.1.3 Pharmacy store:

Physical design: Pharmacy Store

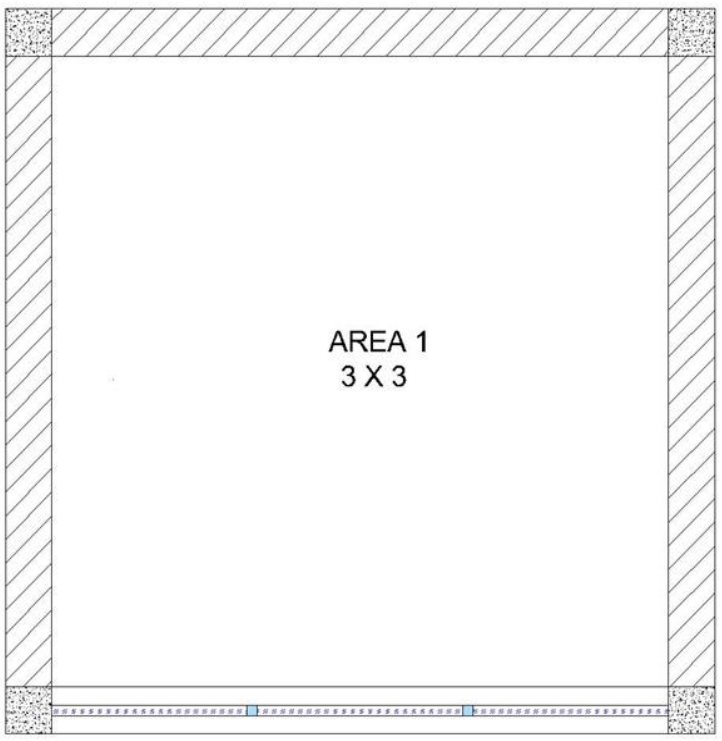
In the Sanki village there is no any PHC or dispensary or private clinic or pharmacy store. So according to the feedback given by the villagers, one dispensary or pharmacy store should be there in the village. The villagers have to go in Jarod for any kind of health or medical facility. So that we have designed one Pharmacy store for the urgent requirement of medicines for the villagers.

MEASUREMENT SHEET					
Sr.No.	Description	Length	Width	height	Qty.
01	WALL 1	4.5	0.22	3	2.97 CM.
02	WALL 2	4.5	0.22	3	2.97 CM.
03	WALL 3	3	0.22	3	1.98 CM.
04	SLAB	3	0.15	3	1.35 CM.
05	FLOOR SLAB	3	0.15	3	1.35 SQ.M.
06	ALUMINIUM GLASS SECTION	3		3	9 SQ.M.

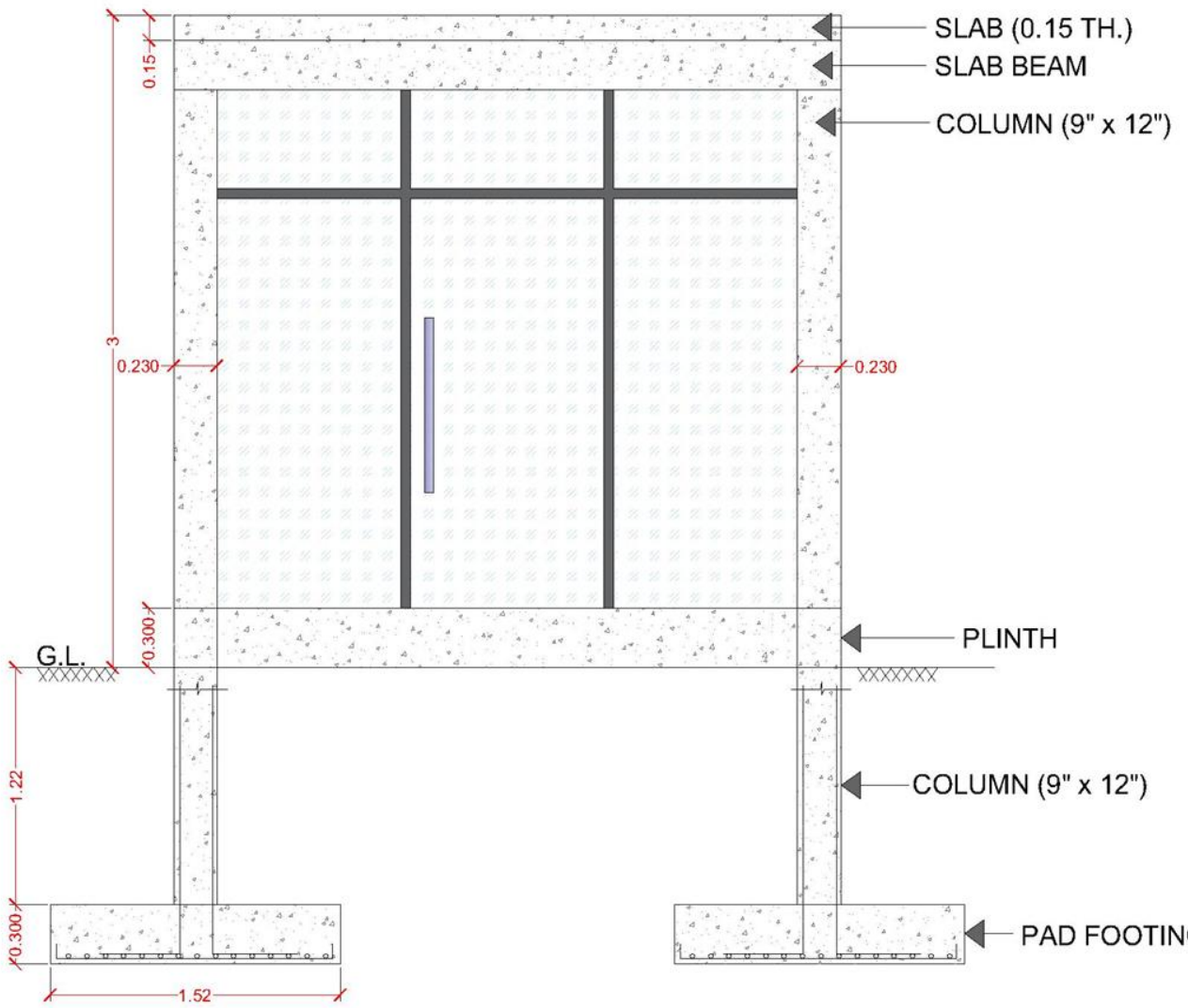
Table 11quantity sheet of pharmacy store

Sr. No.	Item Description	Quantity	Rate	Per	Amount
A	Brick Masonry	7.92	6800	m^3	53856
B	Plastering Work	45	900	m^2	40500
C	SLAB	1.35	3500	m^3	4725
D	FLOOR SLAB	1.35	3500	m^3	4725
E	ALUMINIUM GLASS SECTION	9	270	m^2	2430
				TOTAL	**1,06,236/-**

ABSTRACT SHEET (pharmacy store)

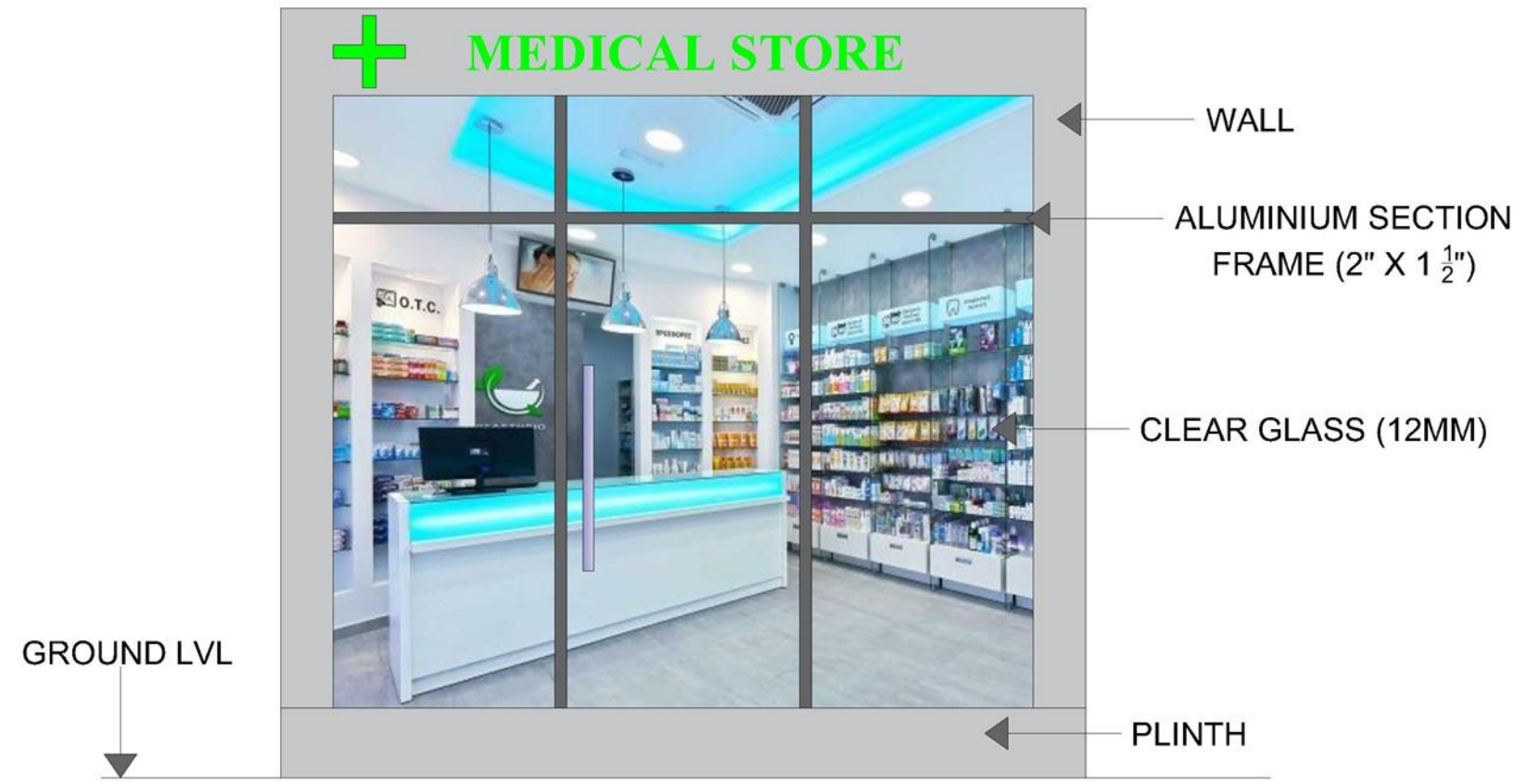


MEDICAL STORE PLAN



MEDICAL STORE SECTION

VISHWAKARMA YOJNA PHASE : VIII
PROPOSED PLAN & SECTION OF MEDICAL STORE
INSTITUTE : PACIFIC SCHOOL OF ENGINNERING
VILLAGE : SANKI
NODAL OFFICER : Prof. MAYUR VEKARIYA



MEDICAL STORE ELEVATION

VISHWAKARMA YOJNA PHASE : VIII
PROPOSED ELEVATION OF MEDICAL STORE
INSTITUTE : PACIFIC SCHOOL OF ENGINNERING
VILLAGE : SANKI
NODAL OFFICER : Prof. MAYUR VEKARIYA

8.1.4

Entrance Gate

Heritage Village Design: Entrance Gate

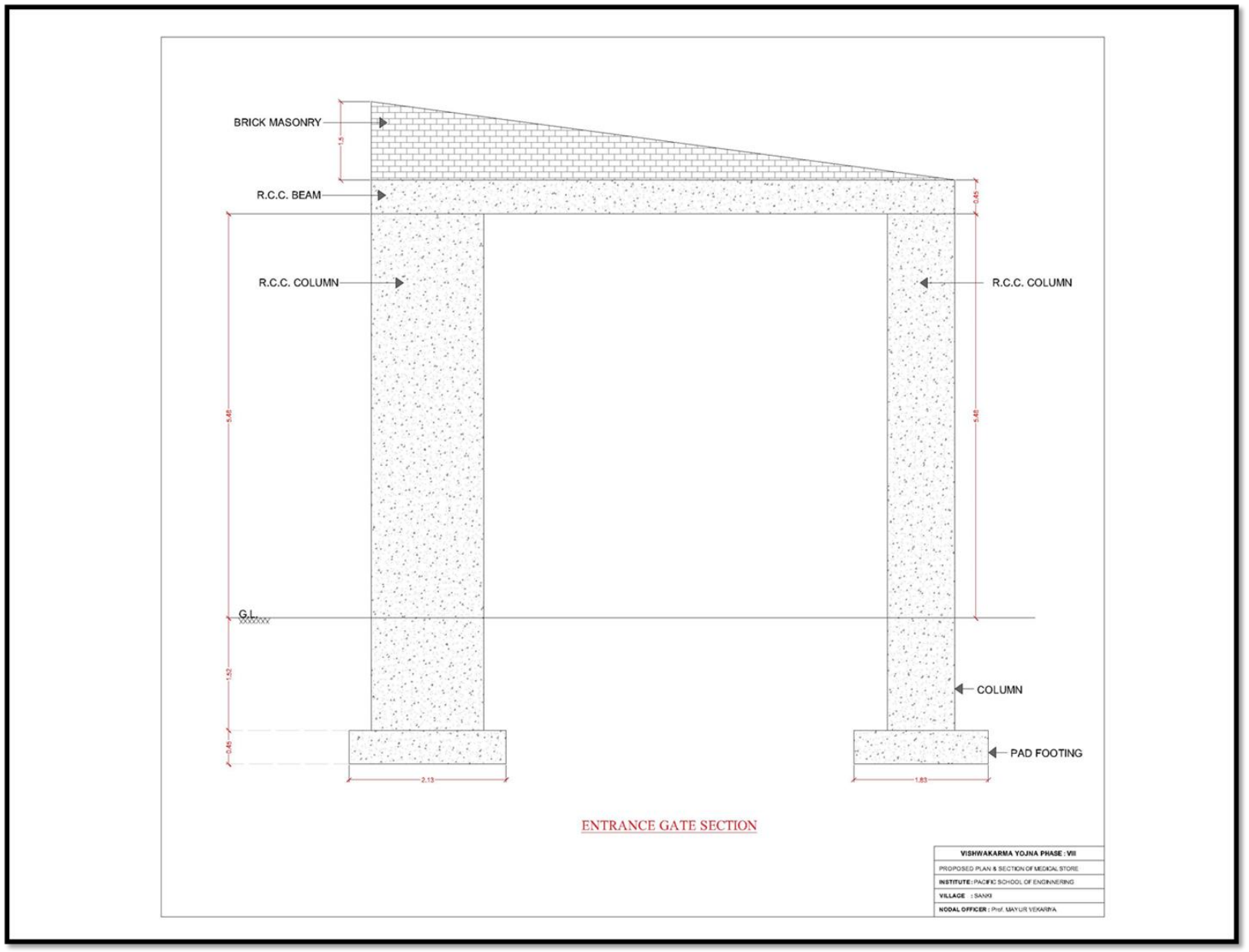
The Sanki village has no main entrance gate at the village approach road. So that we have designed the village entrance gate as heritage village design.

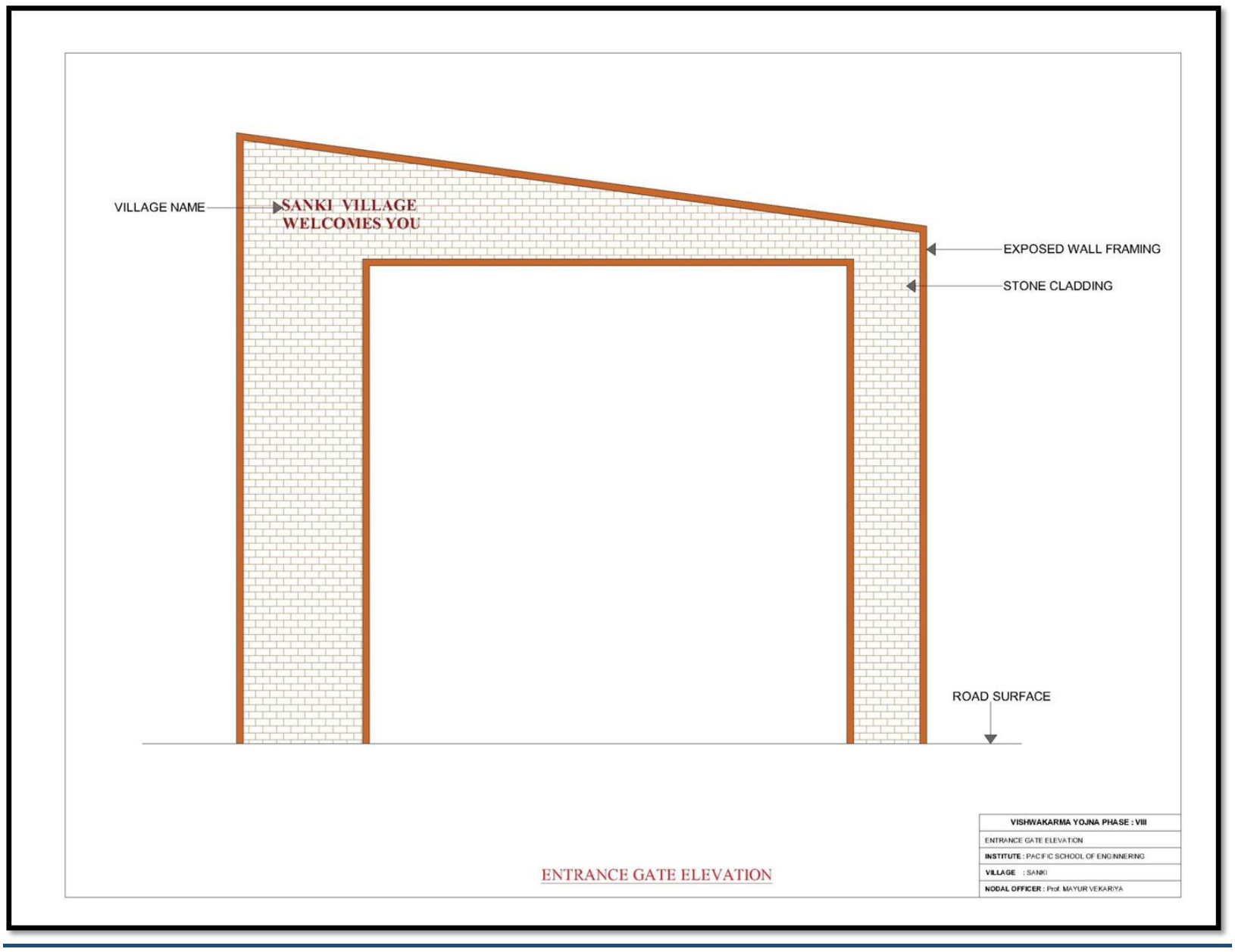
MEASUREMENT SHEET					
Sr.No.	Description	Length	Width	height	Qty.
01	Column 1	1.52	0.30	5.48	2.50 CM.
02	Column 2	0.91	0.30	5.48	1.49 CM.
03	Beam	7.92	0.30	0.45	1.06 CM.
04	Brick Masonry	7.92	0.30	1.5/2	1.782 CM.
05	Plastering Work Part A	1.52		4.57	6.94 SQ.M.
	Plastering Work Part B	0.91		4.57	4.322 SQ.M.
	Plastering Work Part C	4.87		0.45	2.19 SQ.M.
	Plastering Work Part D	0.55		0.60	0.35 SQ.M.

Table 12 Quantity sheet of entrance gate

Sr. No.	**Item Description**	**Quantity**	**Rate**	**Per**	**Amount**
A	Brick Masonry	1.782	6800	m^3	12117.6
B	Plastering Work	13.802	900	m^2	12421.8
C	R.C.C. Work	5.05	3500	m^3	17675
				TOTAL	**42214.4/-**

Table 13 ABSTRACT SHEET (ENTRANCE GATE)


BRICK MASONRY
R.C.C. BEAM
R.C.C. COLUMN
R.C.C. COLUMN
G.L.
COLUMN
PAD FOOTING
ENTRANCE GATE SECTION
VISHWAKARMA YOJNA PHASE : VIII
PROPOSED PLAN & SECTION OF MEDICAL STORE
INSTITUTE : PACIFIC SCHOOL OF ENGINNERING
VILLAGE : SANKI
NODAL OFFICER : Prof. MAYUR VEKARIYA


VILLAGE NAME
SANKI VILLAGE
WELCOMES YOU
EXPOSED WALL FRAMING
STONE CLADDING
ROAD SURFACE
ENTRANCE GATE ELEVATION
VISHWAKARMA YOJNA PHASE : VIII
ENTRANCE GATE ELEVATION
INSTITUTE : PACIFIC SCHOOL OF ENGINNERING
VILLAGE : SANKI
NODAL OFFICER : Prof. MAYUR VEKARIYA


SANKI VILLAGE
WELCOMES YOU

8.1.5 LIBRARY

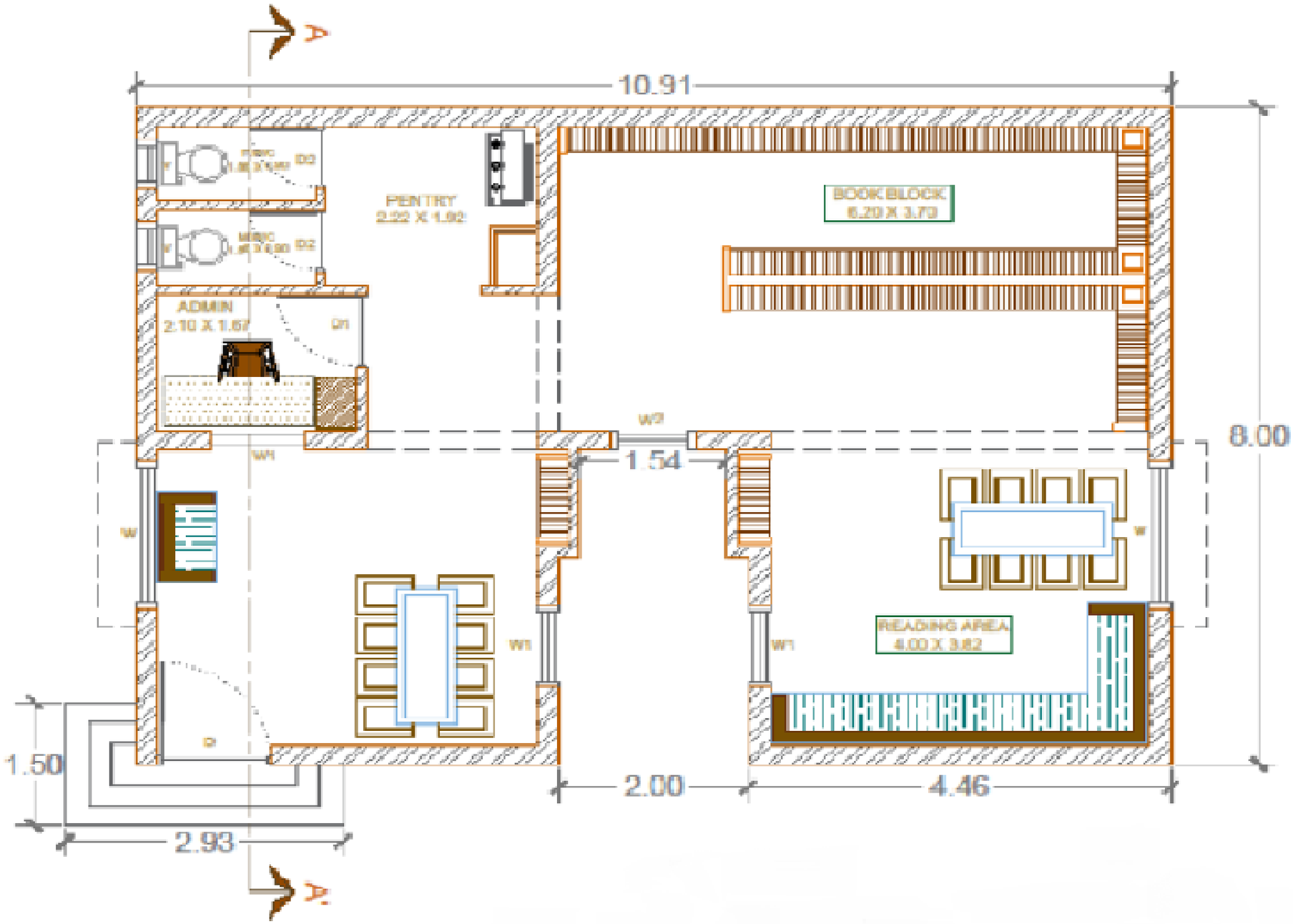
For the betterment in the education system of student and a people of the sanki village and the near by area we have designed a library for the villagers at the compound wall near the community hall.

MEASUREMENT SHEET					
Sr.No.	Description	Length	Width	height	Qty.
1	Earth excavation				
	For wall	43.32	0.9	1.11	43.15
	For step	3.13	1.7	0.1	0.53
2	P.c.c.				
	For foundation	43.2	0.9	0.2	7.776
	For step	3.13	1.7	0.1	0.53
3	2nd class masonry	43.2	0.3		12.96
4	DPC	43.2	0.3		12.96
5	1st class brick	43.87	0.23	3	30.27
6	r.c.c work	1			8.543
7	Steel				670kg
8	Wood work				13.827
9	Flooring				69.35

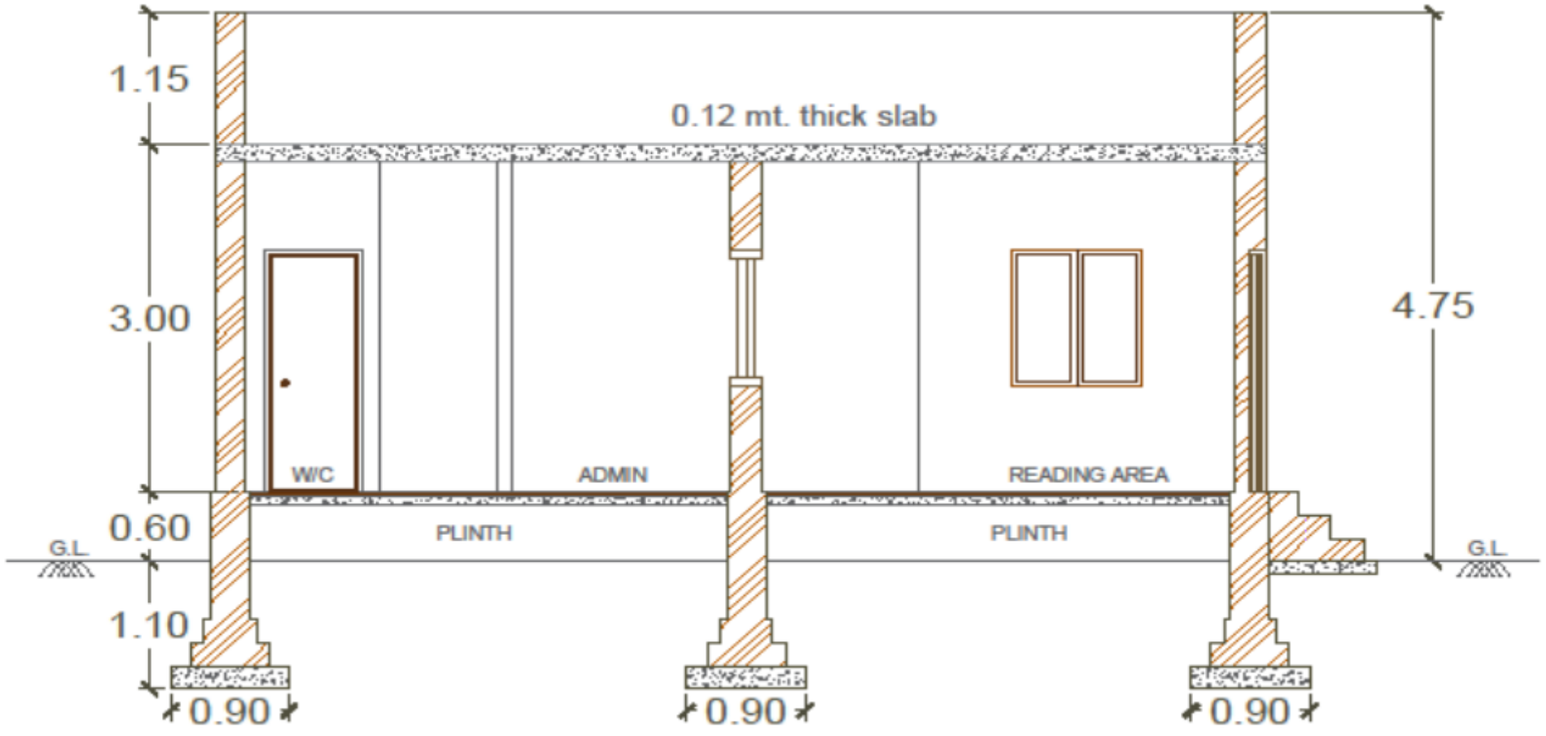
Table quantity sheet of library

Table ABSTRACT SHEET (library)

Sr. No.	Item Description	Quantity	Rate	Per	Amount
1	Earth excavation	43.682	150	m^3	6553
2	p.c.c.	8.308	3900	m^3	32402
3	Brick masonry upto plinth	27.894	5200	m^3	145048
4	DPC	12.96	120	m^2	1555.2
5	Brick masonry for super structure	34.214	4900	m^3	167648
6	R.C.C. Work	8.543	4300	m^3	36734
7	Steel	670	60	Kg	40200
8	Wood work	13.887	2000	m^2	27774
9	Glass work	1.56	50	m^2	78
10	Internal Plaster	151.71	260	m^2	39444
11	Outer Plaster	266.12	310	m^2	82498
12	Flooring	69.35	450	m^2	31208
13	Skirting	52.83	50	m	2642
	Total amount				**6,13,785.5**


A
10.91
8.00
PENTRY
2.22 X 1.92
BOOK BLOCK
6.20 X 3.73
ADMIN
2.10 X 1.67
D1
W2
1.54
W1
W
READING AREA
4.00 X 3.82
2.00
4.46
1.50
2.93
D
A

FRONT ELEVATION



8.1.6 RAINWATER HARVESTING SYSTEM

Study areas for Rainwater Harvesting Design at Sanki Village

we clearly came to know all the prons which we can draw out by implementing this small system. Thus to increase the potential benefits of this system and draw maximum benefits from it, we need to have large rooftop areas which will be going to act as catchment areas. More the catchment areas more will be the surface runoff and thus more will be the amount of harvested water.

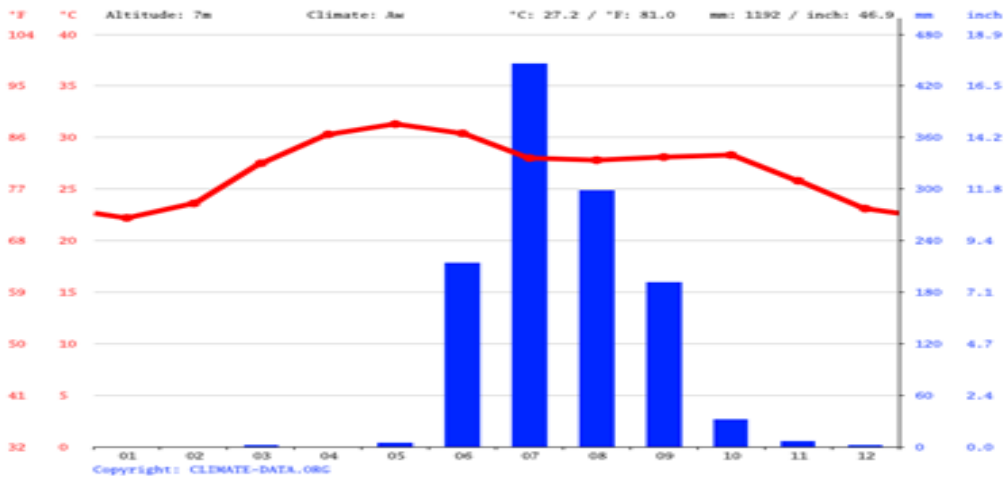
Therefore as much as possible, we have included and considered all the major buildings having large rooftop areas. Hence, study areas includes all the three residence building (TEMPLE,DHARAMSHALA,PRIMARY SCHOOL OF SANKI VILLAGE), Given below a satellite picture, showing the majority of the building in Sanki village, which will also be useful for a rainwater harvesting system. but here we are including only three major buildings having larger rooftops

Data Collection for Rainwater Harvesting Design

Rainfall Data Collection

Sanki village is located at the 72°59'06"E longitude and 21°08'18"N latitude in Surat district of Gujarat state at an elevation of about 22 meters above sea level. Surat's climate is classified as tropical. The summers here have a good deal of rainfall, while the winters have very little. In Sanki, the average annual temperature is 27.0 °C | 80.6 °F. The annual rainfall is 989 mm | 38.9 inch.

Monthly rainfall data of the Sanki village is given below in the graphs which is assumed to be the same for all residential buildings.



‘

Months	Rainfall in mm
January	0
February	0
March	0
April	0
May	3
June	154
July	359
August	253
September	182
October	27
November	10
December	4
Total	989

Precipitation is the lowest in February, with an average of 0 mm | 0.0 inch. Most of the precipitation here falls in July, averaging 359 mm | 14.1 inch.

Between the driest and wettest months, the difference in precipitation is 359 mm | 14 inch. Throughout the year.

Determination of Catchment Area

The rooftop surface area is nothing but the catchment area which receives rainfall. Catchment areas of the different hostels and Institutional departments are measured. This measurement was done manually with the help of "reinforced fiber tape" which is the simplest method known as "tape survey". Before using the tape, it was checked for any zero error and also length of the tape was also carefully checked for its accuracy. Those places which area not accessible to land on, are measured by using the ruler from the tool box of "Google Earth". Given below the table for calculated the rooftop areas of all the buildings suited inside the Sanki.

Serial No.	Building Name	Rooftop area (m^2)
1	Dharamshala	340
2	Temple	289
3	Primary School	450

1. Average rainfall = 989 mm.
2. Collection of Rainwater volume :
3. Density of water = 1000 lit/m^3
4. Tile finish coefficient for roof surface = 0.85
5. Coefficient for evaporation, first-flush, spillage, etc.

Harvesting potential or Volume of water Received (m3)

= Area of Catchment (m^2) X Amount of rainfall (mm) X Runoff coefficient × coefficient for evaporation & flushing

For Primary School,

= 450×989×0.80×0.80
= 284,832 L
= 284.832 m^3

For Dharamshala,

= 340×989×0.80×0.80
= 215,206 L
= 215.206 m^3

Optimistic Determination of Size

FOR PRIMARY SCHOOL :

This area presently has a capacity of 100 students including staff. It has a continuous paved mess roof.
The total rooftop area of the primary school available for the rainwater harvesting is 450 m².

FOR DHARAMSHALA :

This area presently has a capacity of 20 people
The total rooftop area of the Dharamshala available for the rainwater harvesting is 340 m².

Capacity of storage Tank :

The tank has to be designed for dry periods i.e. the period between two consecutive rainy seasons. With the monsoon exceeding over 4 months, a dry period for 245 days has been considered.

FOR PRIMARY SCHOOL,
= use of rainwater in dry days × no. of person × use of drinking water per individual
= 245 × 100 × 5
= 122500 L

FOR DHARAMSHALA,
= use of rainwater in dry days × no. of person × use of drinking water per individual
= 245 × 20 × 5
= 24,500 L

LOCATION	ACCUMULATE OF WATER IN LITER	REQUIREMENT IN LITRE
Primary School	**284,832**	**122,500**
Dharamshala	**215,206**	**24,500**
Temple	**182,925**	**61,250**

As safety purpose the tank should be built 20% larger than required :

FOR PRIMARY SCHOOL,

= 284,832 × 1.20
= 341,798.4
= 342 m^3

FOR DHARAMSHAL

= 215,206 × 1.20
= 258,247.2
= 258.25 m^3

Optimum Dimension of the Tank

For Primary School, total amount of water collected in one year = size of the tank = 342 m^3

Provide tank 11 m × 4 m × 8 m in size

Consider free board = 150 mm

Hence, Water depth = 8 - 0.15

= 7.85 m

Volume = 11 × 4 × 7.85

= 345.4 m^3
= 345400 Litres

Similarly, For Dharamshala, total amount of water collected in one year = size of the tank = 258 m^3

Provide tank 9.5 m × 4 m × 7 m in size

Consider free board = 150 mm

Hence, Water depth = 7 - 0.15

= 6.85 m
Volume = 9.5 × 4 × 6.85
= 260 m^3
= 260000 Litres

For Temple, total amount of water collected in one year = size of the tank = 220 m^3

Provide tank 8 m × 4 m × 7 m

Consider free board = 150 mm

Hence, Water depth = 7 - 0.15

= 6.85 m

Volume = 8 × 4 × 6.85

= 220 m^3

= 220000 Litres

Design of Tank

Type of Tank	Width (m)	Length (m)	Height (m)
Filter Tank (Same for all building)	1	1	1
Underground Tank For Primary School For Dharamshala For Temple	 11 9.5 8	 4 4 4	 8 7 7
Overhead Tank	1	1	1

Details Estimation and Costing of Water Tank

FOR PRIMARY SCHOOL,

Size of tank = 11 m x 4 m x 8 m

1) **Excavation**
2) **PCC work (1:4:8)**
3) **RCC work (1:2:4)**
4) **Steel weight calculation@ 1%**

Measurement sheet

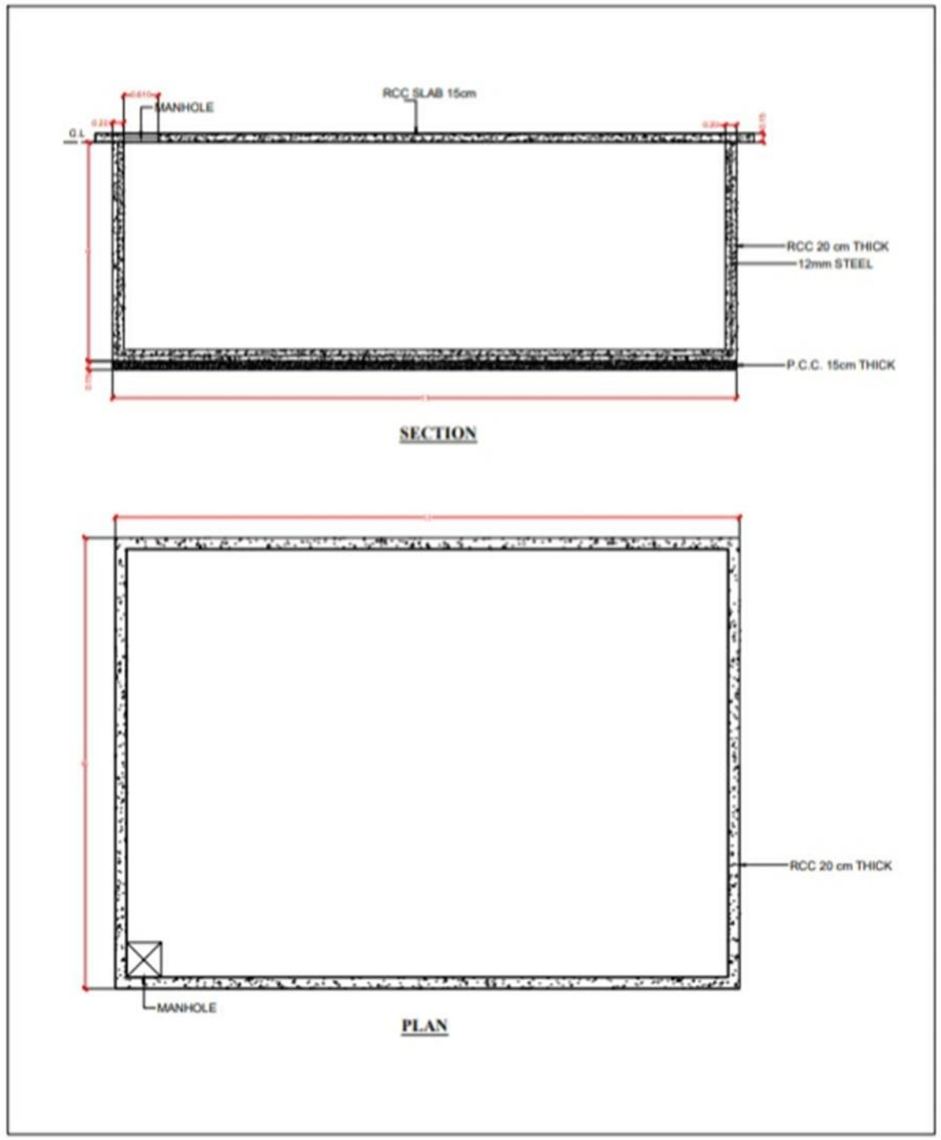
Sr No.	Description	No	L	B	H
1	Excavation L = 11+ 0.20 + 0.20 = 11.40 m B = 4 + 0.20 + 0.20 = 4.40 m H = 8 + 0.20 + 0.15 = 8.35 m	1	11.40	4.40	8.35
2	PCC (1:4:8)	1	11.40	4.40	0.15

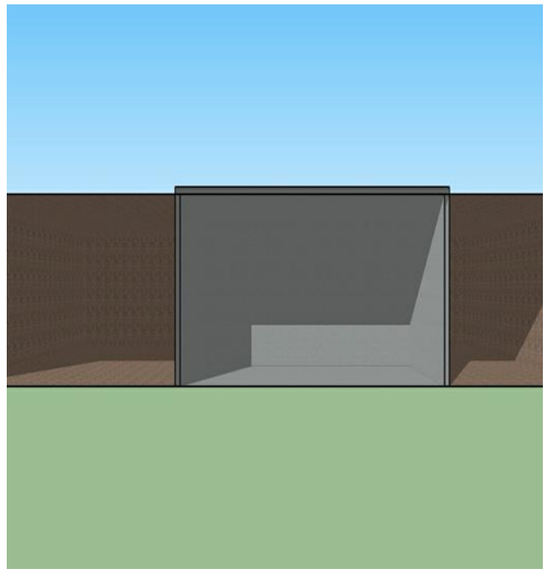
3	RCC (1:2:4) 1) In floor 2) In walls ➢ long walls ➢ Short walls ➢ Slab L = 11 + 0.20 + 0.20 W 0.30 +0.30 = 12 B = 4 + 0.20 + 0.20 +30 + 0.30 = 5 H = 0.15	 1 2 2 1	 11.40 11.40 4 12	 4.40 0.20 0.20 5	 0.20 8 8 0.15	 10.03 m³ 36.48 m³ 12.80 m³ 9 m³
	Deduction of M.H = area x thickness Area = πr² = 3.14 x 0.25² = 0.196 m² Thickness = 0.15 m Manhole = 0.196 x 0.15 = 0.029 m³		Total RCC = 68.31 m³ Net total RCC = 68.31 - 0.029 = 68.28 m³			
4	Steel in RCC @ 1 % Weight of steel = W		= (1/100) x 68.28 = 0.683 m³ = Volume x unit weight = 0.683 x 7850 kg/m³(mild steel) = 5361.55 kg mild steel			

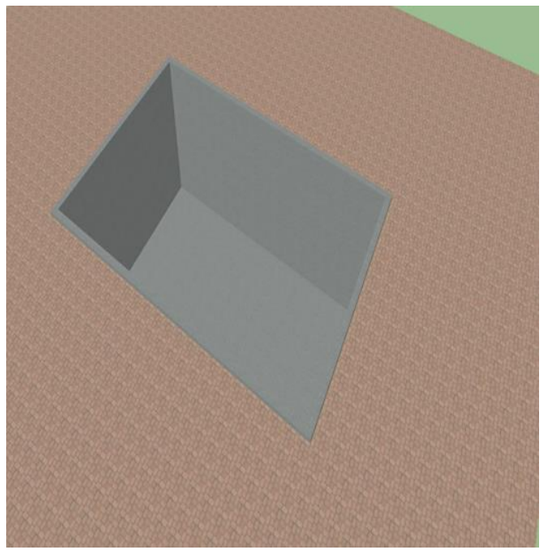
Abstract sheet

No.	Description	Unit	Rate(Rs)	Quantity	Cost (Rs)
1.	Excavation	m³	85	418.84	35,601
2.	P.C.C. (1:4:8)	m³	3000	7.52	22,560
3.	R.C.C(1:2:4)	m³	6000	68.28	4,09,680

4.	Steel in RCC @ 1%	Kg	60	5361.55	3,21,693
5.	PVC piping for rainwater pipes 75 mm diameter 110 mm diameter	 M M	 41 75	 4 8.5	 164 637.50


MANHOLE
RCC SLAB 15cm
RCC 20 cm THICK
12mm STEEL
P.C.C. 15cm THICK
SECTION
RCC 20 cm THICK
MANHOLE
PLAN





For Dharamshala,

Size of tank = 9.5 m x 4 m x 7 m

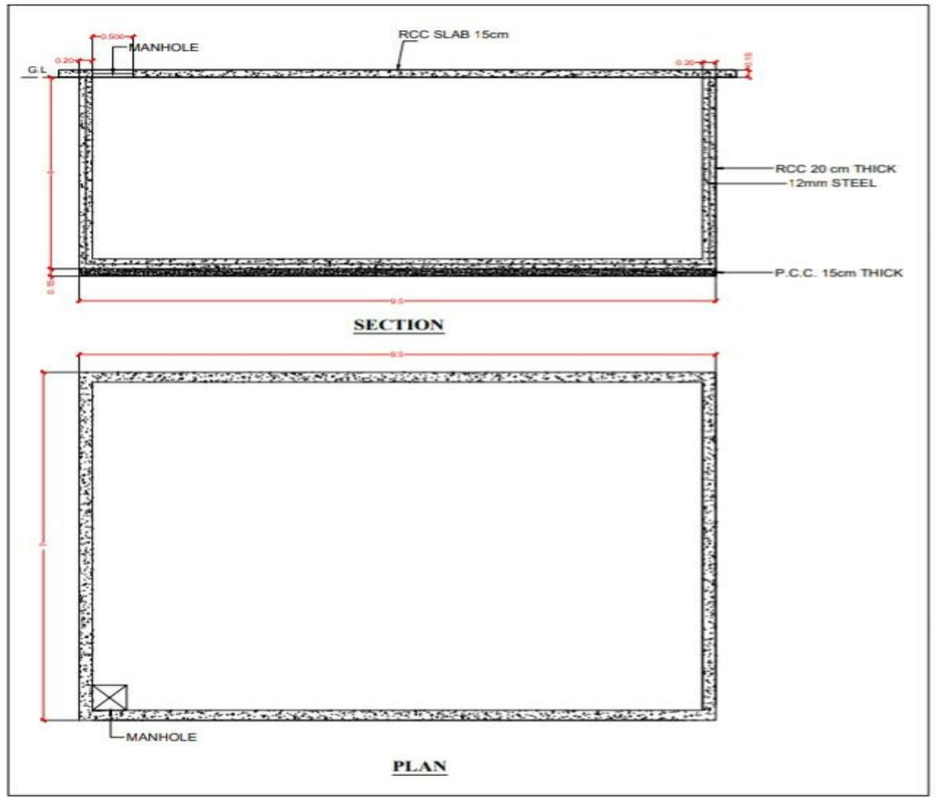
1) **Excavation**
2) **PCC work (1:4:8)**
3) **RCC work (1:2:4)**
4) **Steel weight calculation@ 1%**

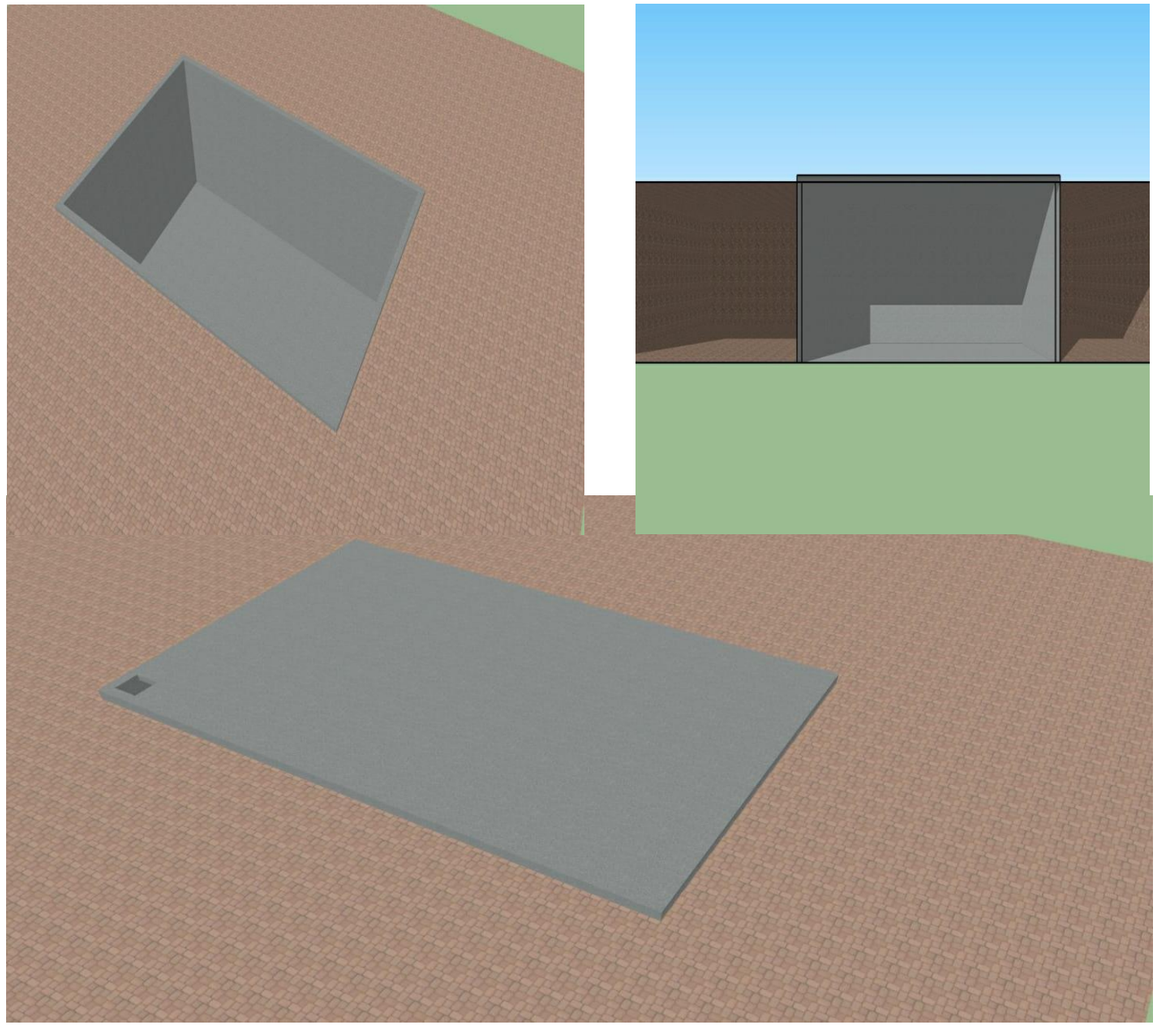
Measurement sheet

Sr No.	Description	No	L	B		H	Quality
1	Excavation L = 9.5 + 0.20 + 0.20 = 9.90 m B = 4 + 0.20 + 0.20 = 4.40 m H = 7 + 0.20 + 0.15 = 7.35 m	1	9.90	4.40		7.35	320.17 m^3
2	PCC (1:4:8)	1	9.90	4.40		0.15	6.53 m^3
3	RCC (1:2:4) 1) In floor 2) In walls ➢ long walls ➢ Short walls ➢ Slab L = 9.5 + 0.20 + 0.20 W 0.30 +0.30 = 10.5 B = 4 + 0.20 + 0.20 +30 + 0.30 = 5 H = 0.15	 1 2 2 1	 9.90 9.90 4 10.5	 4.40 0.20 0.20 5		 0.20 7 7 0.15	 8.71 m^3 27.72 m^3 11.20 m^3 7.87 m^3
	Deduction of M.H = area x thickness Area = πr^2 = 3.14 x 0.25^2 = 0.196 m^2 Thickness = 0.15 m Manhole = 0.196 x 0.15 = 0.029 m^3		Total RCC = 55.50 m^3 Net total RCC = 55.50 - 0.029 = 55.47 m^3				
4	Steel in RCC @ 1 % Weight of steel = W		= (1/100) x 55.47 = 0.555 m^3 = Volume x unit weight = 0.555 x 7850 kg/m^3(mild steel) = 4,356.7 kg mild steel				

Abstract sheet

No.	Description	Unit	Rate	Quantity	Cost (Rs.)
1.	Excavation	m^3	85	320.17	27,214
2.	P.C.C. (1:4:8)	m^3	3000	6.53	19,590
3.	R.C.C. (1:2:4)	m^3	6000	55.47	3,32,820
4.	Steel in R.C.C @ 1% of R.C.C	kg	60	4356.7	2,61,402
5.	PVC piping for rainwater pipes 75 mm diameter 110 mm diameter	 M M	 41 75	 4 8.5	 164 637.50
			Total cost = Rs. 6,41,827 Lump sum cost = Rs. 6,41,830		


RCC SLAB 15cm
MANHOLE
G.L
RCC 20 cm THICK
12mm STEEL
P.C.C. 15cm THICK
SECTION
MANHOLE
PLAN



8.2 Reason for Students Recommending this Design

We are recommending this design because of the lack of facilities in our village, villagers are facing so many problems like rain water use, aanganwadi facility, phc center, etc. which are the essential necessities of every person .so for solving the problems of villagers we are suggesting this design for development.

8.3 About designs Suggestions / Benefit of the villager

The main aim of the project is to provide urban amenities in rural area and maintaining the rural soul. This will help in developing villages in a sustainable manner, reduce migration from villages and prevent the cities from the urban pressure. Basic physical infrastructure likes water supply, transport, Waste water Drainage facilities should be the priority focus and be provided.

If new path of technology is implemented in village the following benefits are come for villagers:

- Village becomes clean.
- Benefit to better agriculture.
- Diseases reduce.
- Quality of life will become better.
- Literacy rate increase because of increase in knowledge source

Chapter: 9

Proposing designs for future development of the village for PART-II DESIGN

Physical design:Safety wall of pond

Pond no.2, 3 are pond in village which are located near to residential area and that has no safety wall around it so periphery is very dangerous for kids and villagers.

Social design:Community hall restoration and cricket ground

In sanki village there is a community hall which is now not used by villagers because it is totally weak by the structural properties and also congested according to present population so it is need to redesign again. Also the village has cricket groud which has to be developed.

Heritage village design:Ev-Rikshaw stand

The Sanki village has no transporationfaciltyat the village approach road. So that we have designed the one time investment electric auto rikshaw stand.

Sustainable design:Grain Godown & skill development center

In the Sanki village there is no any Godown for storage of agriculture. So according to the feedback given by the villagers, storage Godown should be there in the village as people are engaged in agriculture field. Also the skill development center will help the women to get a more knowledgeable.

Chapter : 10

Conclusion of the entire village Activities of the project

VY aims the development of the village with providing urban amenities without changing their soul. Through the development of the villages we contribute to the development of the country. If villages are not developed, then by the Vishwakarma Yojana provide platform to young engineers that can reduce the gap between urban and rural by designing proper plans and proposal.

By carrying out the gap analysis we found the gap between the existing facilities and facilities actually required as per norms and will suggest sustainable plans and proposals for filling these gaps and contribute to the development of village.

We have designed anENTRANCE GATE, PHARMACY STORE,AANGANWADI RETAINING WALL AROUND A POND 2-3,RAIN WATER HARVESTING TANKS AND SOLAR STREET LIGHTS.

ENTERANCE GATE:

Is the element of village the visitor notices, it also help to create an impression of village. The well designed entrance gate will give a good entranceappearance as well.

PHARMACY STORE

Scope of providing pharmacy store is to compounding and dispensing of medication and it also include more modern service related to health care including clinical services.

AANGANWADI

To improve the nutritional and health status of children below the age of six year. To lay the foundation for the proper psychological, physical and social development of child.

It is congested in our village so we have design it for future design as per the present and future population data.

RETAINING WALL:

Pond 2, 3 are located near the residential area and soil sliding occurs from sides of houses and that May severe effect to the nearby house structure.

So the retaining wall helps to nearby effects on house.

Chapter: 11

References of report

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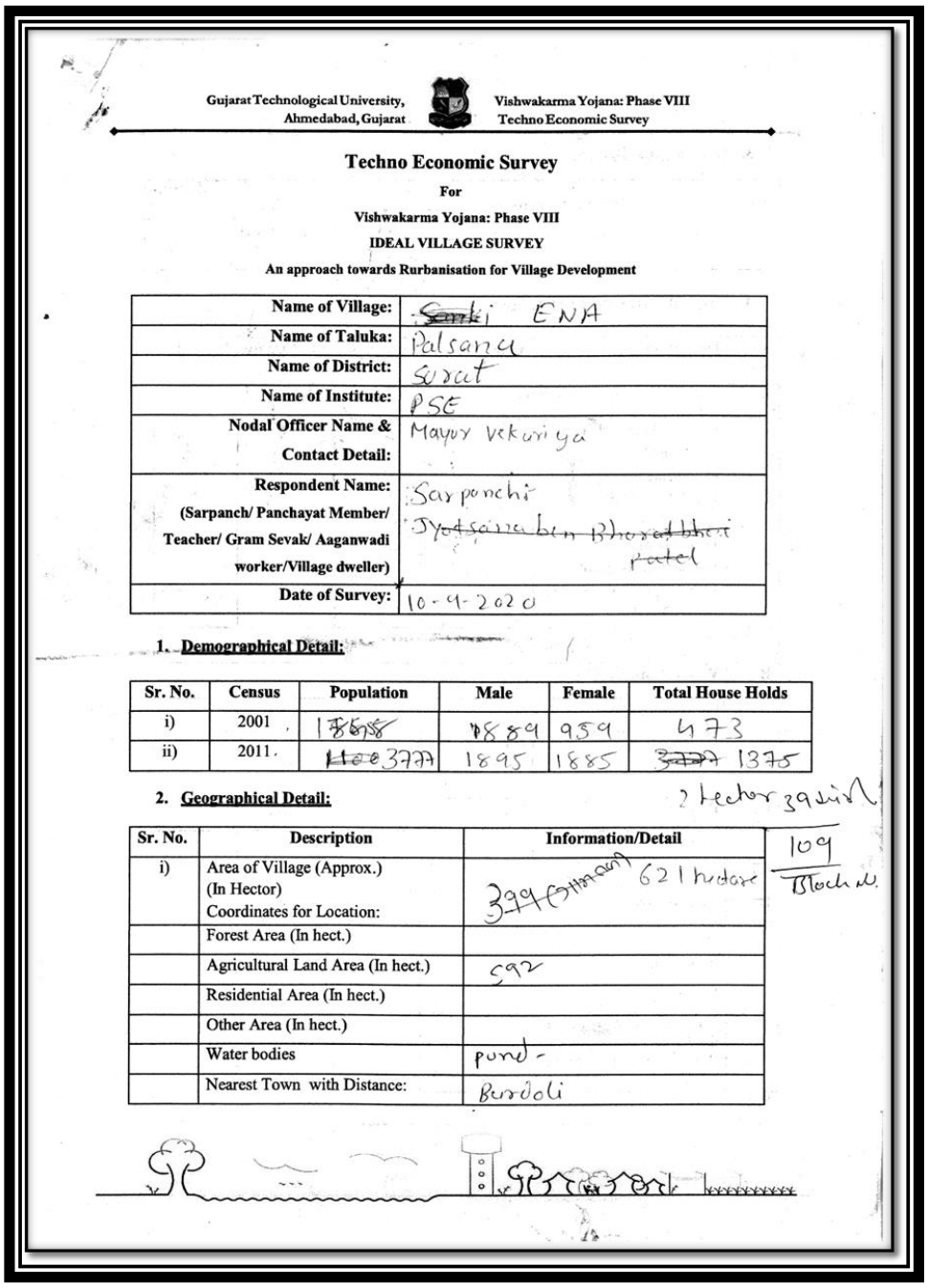
Chapter: 12

Annexure attachment

12.1 Survey form of Ideal village Scanned copy attachment in the report for part-1

Survey form of Ideal village Original copy attachment in the report for part-2



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Vishwakarma Yojana: Phase VIII
Techno Economic Survey

Techno Economic Survey

For

Vishwakarma Yojana: Phase VIII

IDEAL VILLAGE SURVEY

An approach towards Rurbanisation for Village Development

Name of Village:	~~Sanki~~ ENA
Name of Taluka:	Palsana
Name of District:	Surat
Name of Institute:	PSE
Nodal Officer Name & Contact Detail:	Mayur Vekariya
Respondent Name: (Sarpanch/ Panchayat Member/ Teacher/ Gram Sevak/ Aaganwadi worker/Village dweller)	Sarpanchi ~~Jyotsanaben Bhavadbhai~~ patel
Date of Survey:	10-9-2020

1. Demographical Detail:

Sr. No.	Census	Population	Male	Female	Total House Holds
i)	2001	~~1756~~	~~858~~ 889	959	473
ii)	2011	~~1766~~ 3777	1895	1885	~~3777~~ 1375

2. Geographical Detail:

2 hector 39 sir

Sr. No.	Description	Information/Detail
i)	Area of Village (Approx.) (In Hector) Coordinates for Location:	394 hectare 621 hectare
	Forest Area (In hect.)	
	Agricultural Land Area (In hect.)	592
	Residential Area (In hect.)	
	Other Area (In hect.)	
	Water bodies	pond -
	Nearest Town with Distance:	Bardoli

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Block No.

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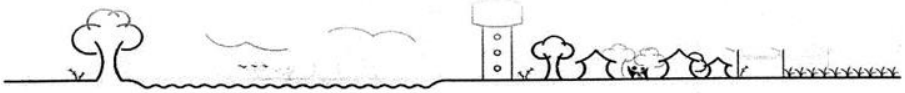
3. **Occupational Details:**

Name of Three Major Occupation groups in Village	1.	Agriculture
	2.	milk industry
	3.	Mill workers

4. **Physical Infrastructure Facilities:**

Sr. No.	Descriptions	Detail	Adequate	Inadequate	Remarks
A.	**Main Source of Drinking water**				
	• Tap Water (Treated/ Untreated)	Tapwater	✓		
	• RO Water	✓ 1	✓		
	• Well (Covered/ Uncovered)	✓ 1	✓		
	• Hand pumps	✓ 15	✓		
	• Tube well/ Borehole	✓ 11	✓		
	• River/ Canal/ Spring/ Lake/ Pond	3 pond	✓		
Suggestions if any:					
B.	**Water Tank Facility**				
	Overhead Tank	Capacity:	300,00		
	Underground Sump	Capacity:			
Suggestions if any:					
C.	**Drainage Facility**				
	Available (Yes/ No)	✓	✓		
Suggestions if any:					
D.	**Type of Drainage**				
	Closed/ Open	Closed	✓		
	If Open than Pucca / Kutchcha				
	Whether drain water is discharged directly in to Water bodies/ Sewer plants	kutchi gutar			
Suggestions if any:					



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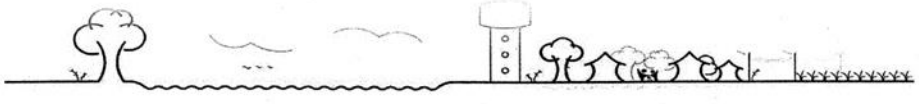
E.	Road Network :All Weather/ Kutchha (Gravel)/ Black Topped pucca/ WBM				
	Village approach road	CC Road	✓		
	Main road	WBM	✓		
	Internal streets	Block/RCC	✓		
	Nearest NH/SH/MDR/ODR Dist. in kms.	NH-48 2km			
Suggestions if any:					
F.	**Transport Facility**				
	Railway Station (Y/N) (If No than Nearest Rly Station---Kms)	N Chalthan	3km		
	Bus station (Y/N) Condition: (If No than Nearest Bus Station---Kms)	N Kadodara 5km	✓		
	Local Transportation (Auto/ Jeep/Chhakda/ Private Vehicles/ Other)	Auto			
Suggestions if any:					
G.	**Electricity Distribution**				
	(Y/N) Govt./ Private (Less than 6 hrs./ More Than 6 hrs)	Govt Morethan 6hrs	✓		
	Power supply for Domestic Use	✓			
	Power supply for Agricultural Use	8hour	✓		
	Power supply for Commercial Use	24hr	✓		
	Road/ Street Lights	Yes	✓		



	Electrification in Government Buildings/ Schools/ Hospitals	✓			
	Renewable Energy Source Facilities (Y/ N)	Panchyat Solar top	✓		
	LED Facilities	✓	✓		
Suggestions if any:					
H.	**Sanitation Facility**				
	Public Latrine Blocks If available than Nos.	1	2 ladies 2 gents.		
	Location Condition	New girnar			
	Community Toilet (With bath/ without bath facilities)	NO			
	Solid & liquid waste Disposal system available	opp Cracker godown	✓		
	Any facility for Waste collection from road	Near newgirnar	✓		
Suggestions if any:					
I.	**Irrigation Facility:**				
	Main Source of Irrigation (Stream/River/ Canal/ Well/ Tube well/ Other)	Canal Tubewell	✓		
Suggestions if any:					
J.	**Housing Condition:**				
	Kutchha/Pucca (Approx. ratio)	Pucca	~~70 k~~ Pakka	~~[illegible]~~ for	pass SUDA

Pradhanmantri awas

5. Social Infrastructural Facilities:

Sr. No.	Descriptions	Information/ Detail	Adequate	Inadequate	Remarks

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K.	Health Facilities:				
	Sub center/ PHC/ CHC /Government Hospital/ Child welfare & Maternity Homes (If Yes than specify No. of Beds) Condition:	NO	Arogya officer 2day visit	near [illegible] Koron	, well
	Private Clinic/Private Hospital/ Nursing Home	1	✓		
	If any of the above Facility is not available in village than approx. distance from village: ..5....kms.				
Suggestions if any:					

L.	Education Facilities:				
	Aaganwadi/ Play group	1	Aaganwadi ✓		
	Primary School	1			
	Secondary school	–			
	Higher sec. School	–			
	ITI college/ vocational Training Center	–			
	Art, Commerce& Science /Polytechnic/ Engineering/ Medical/ Management/ other college facilities	✓			
	If any of the above Facility is not available in village than approx. distance from village: ..5....kms.				
Suggestions if any:					

M.	Socio- Culture Facilities				
	Community Hall (With or without TV) Location: Near pond.	Bad condition		✓	

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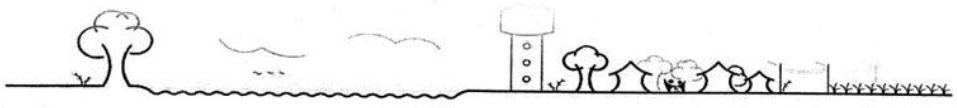
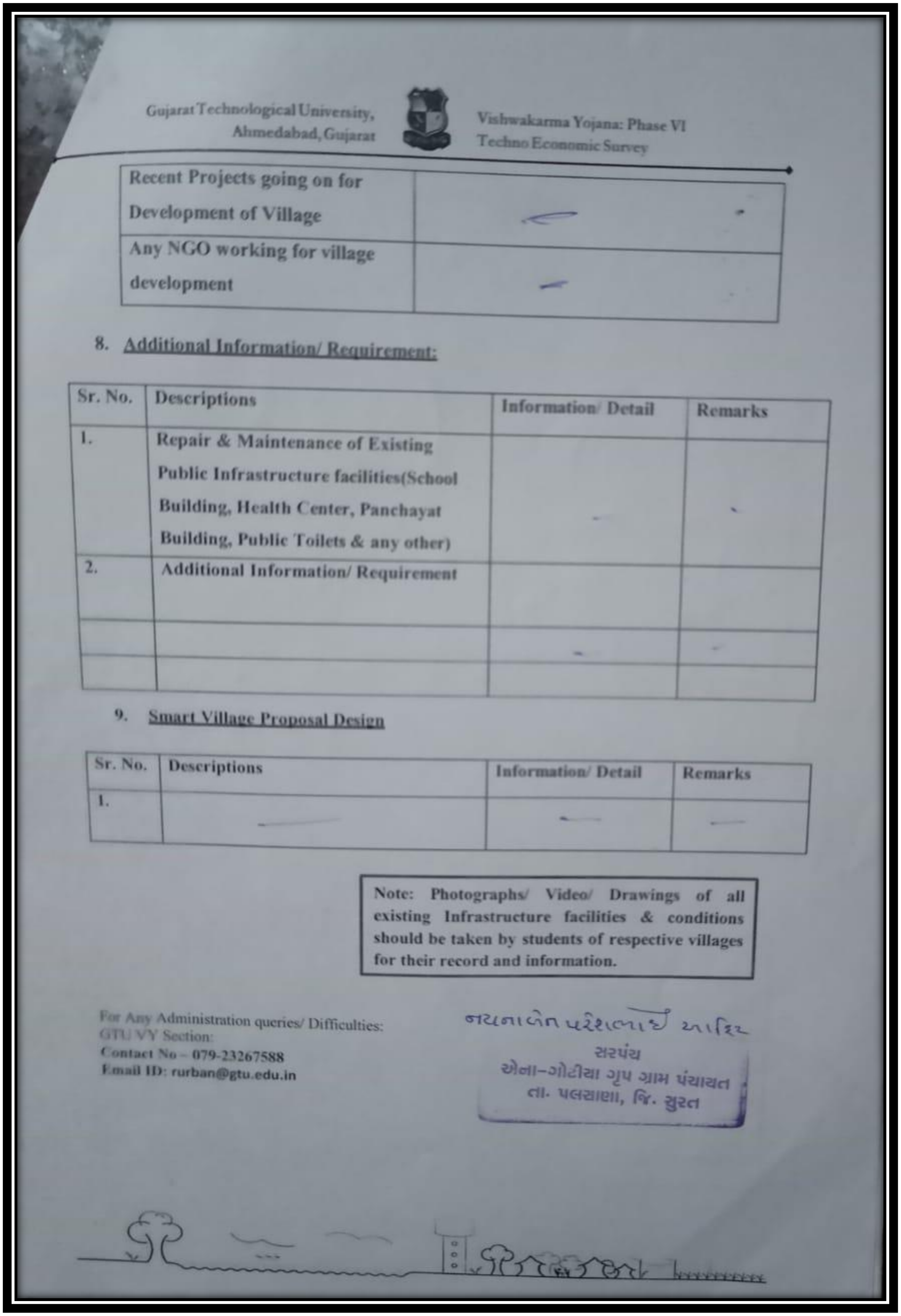
	Condition:				
	Public Library (With daily newspaper supply: Y/N) Location: Condition:	NO			
	Public Garden Location: Condition:	yes	Renovation Required ✓		
	Village Pond Location: Condition:		New ✓		
	Recreation Center Location: Condition:		Need Development		
	Cinema/ Video Hall Location: Condition:	NO	✓		
	Assembly Polling Station Location: Condition:	Ranchoodji temple	✓		
	Birth & Death Registration Office Location: Condition: New	yes gram panchyat	✓		

If any of the above Facility is not available in village than approx. distance from village: .....kms.

Suggestions if any:

N.	Other Facilities				
	Post-office	Karan			
	Telecommunication Network/ STD booth	—			





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Recent Projects going on for Development of Village	—
Any NGO working for village development	—

8. Additional Information/ Requirement:

Sr. No.	Descriptions	Information/ Detail	Remarks
1.	Repair & Maintenance of Existing Public Infrastructure facilities(School Building, Health Center, Panchayat Building, Public Toilets & any other)	-	-
2.	Additional Information/ Requirement		
		-	-

9. Smart Village Proposal Design

Sr. No.	Descriptions	Information/ Detail	Remarks
1.	—	—	—

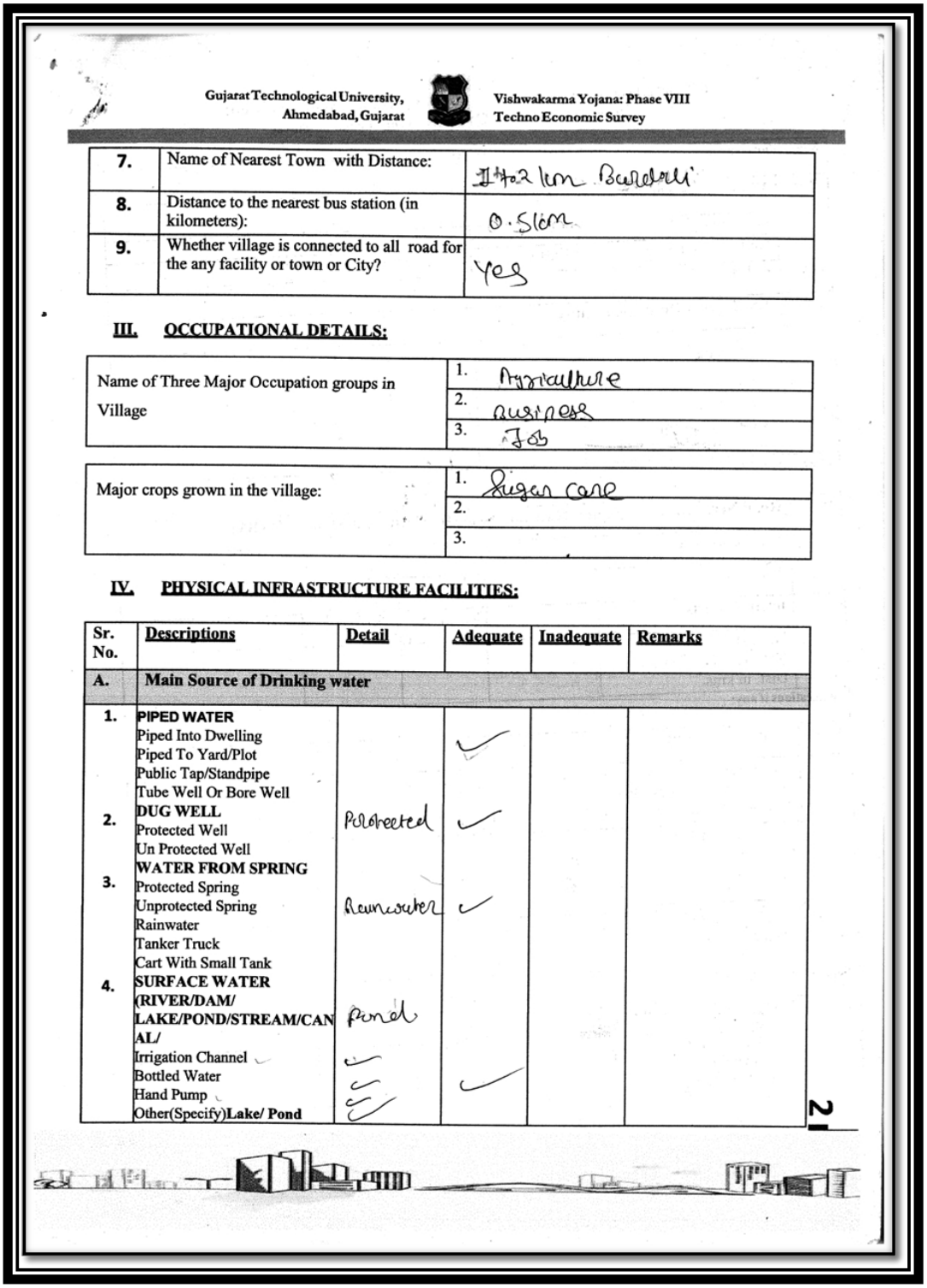
Note: Photographs/ Video/ Drawings of all existing Infrastructure facilities & conditions should be taken by students of respective villages for their record and information.

For Any Administration queries/ Difficulties:
GTU VY Section:
Contact No – 079-23267588
Email ID: rurban@gtu.edu.in

નયનાબેન પરેશભાઈ આહિર
સરપંચ
એના-ગોટીયા ગ્રુપ ગ્રામ પંચાયત
તા. પલસાણા, જિ. સુરત

12.2 Survey form of SMART village Scanned copy attachment in the report for part-1

Survey form of SMART village Original copy attachment in the report for part-2



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7.	Name of Nearest Town with Distance:	12 km Bardoli
8.	Distance to the nearest bus station (in kilometers):	0.5 km
9.	Whether village is connected to all road for the any facility or town or City?	Yes

III. OCCUPATIONAL DETAILS:

Name of Three Major Occupation groups in Village	1.	Agriculture
	2.	Business
	3.	Job
Major crops grown in the village:	1.	Sugar cane
	2.	
	3.	

IV. PHYSICAL INFRASTRUCTURE FACILITIES:

Sr. No.	Descriptions	Detail	Adequate	Inadequate	Remarks
A.	**Main Source of Drinking water**				
1.	**PIPED WATER** Piped Into Dwelling Piped To Yard/Plot Public Tap/Standpipe Tube Well Or Bore Well		✓		
2.	**DUG WELL** Protected Well Un Protected Well	Protected	✓		
3.	**WATER FROM SPRING** Protected Spring Unprotected Spring Rainwater Tanker Truck Cart With Small Tank	Rainwater	✓		
4.	**SURFACE WATER (RIVER/DAM/ LAKE/POND/STREAM/CANAL/** Irrigation Channel Bottled Water Hand Pump Other(Specify)**Lake/ Pond**	Pond ✓ ✓ ✓	✓		

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Suggestions if any:

B.	Water Tank Facility				
	Overhead Tank	Capacity: Slab	✓	5,00,000	4 Nos
	Underground Sump	Capacity:			

Suggestions if any:

C.	The Type of Drainage Facility				
	A. UNDERGROUND DRAINAGE 1 Underground 2 Covered B. OPEN WITH OUTLET C. OPEN WITHOUT OUTLET		✓ ✓		

Suggestions if any:

D.	Road Network :All Weather/ Kutchha (Gravel)/ Black Topped pucca/ WBM				
	Village approach road	R.C.C.	✓		
	Main road	Bhumin	✓		
	Internal streets	R.C.C.	✓		
	Nearest NH/SH/MDR/ODR Dist. in kms.	NH-6 SH-165	✓		

Suggestions if any:

E.	Transport Facility				
	Railway Station (Y/N) (If No than Nearest Rly Station---Kms)	No – Bardoli	✓		Good
	Bus station (Y/N) Condition: well (If No than Nearest Bus Station---Kms)	Bardoli	✓		
	Local Transportation (Auto/ Jeep/Chhakda/ Private Vehicles/ Other)	Yes Auto	✓		

Suggestions if any:

F.	Electricity Distribution				
	(Y/N) Govt./ Private (Less than 6 hrs./ More Than 6 hrs)	Govt. Morethan 6hr	✓		

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V. SOCIAL INFRASTRUCTURAL FACILITIES:

Sr. No.	Descriptions	Information/ Detail	Adequate	Inadequate	Remarks
J.	**Health Facilities:**				
	ICDS (Anganwadi)	01	✓		
	Sub-Centre	03	✓		
	PHC	01	✓		
	BLOCK PHC		×		
	CHC/RH		×		
	District/ Govt. Hospital	01	✓		
	Govt. Dispensary		×		
	Private Clinic		✓		
	Private Hospital/		✓		
	Nursing Home		×		
	AYUSH Health Facility		×		
	sonography /ultrasound facility		✓		
	If any of the above Facility is not available in village than approx. distance from village: 5 kms.				
Suggestions if any:					
K.	**Education Facilities:**				
	Aaganwadi/ Play group		✓		
	Primary School	03	✓		
	Secondary school	01	✓		
	Higher sec. School	01	✓		
	ITI college/ vocational Training Center		×		
	Art, Commerce& Science /Polytechnic/ Engineering/ Medical/ Management/ other college facilities	01	✓		2-3 terms
	If any of the above Facility is not available in village than approx. distance from village: 2-3 kms.				

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Suggestions if any:

L.	Socio- Culture Facilities	Condition	Location	Available (YES)	Available (NO)
	Community Hall (With or without TV)	Adequate	opposite Panchayat	Yes	
	Public Library (With daily newspaper supply: Y/N)		Beside Primary	yes	
	Public Garden			yes	
	Village Pond			yes	
	Recreation Center		Primary Pond	yes	
	Cinema/ Video Hall				No
	Assembly Polling Station				No
	Birth & Death Registration		Panchayat	yes	

If any of the above Facility is not available in village than approx. distance from village: .....kms.

Suggestions if any:

M.	Other Facilities	Condition	Location	Available (YES)	Available (NO)
	Post-office	Excellent		yes	
	Telecommunication Network/ STD booth			yes	
	General Market			yes	
	Shops (Public Distribution System)			yes	
	Panchayat Building			yes	
	Pharmacy/Medical Shop			yes	
	Bank & ATM Facility			yes	
	Agriculture Co-operative Society			yes	
	Milk Co-operative Soc.			yes	
	Small Scale Industries			yes	
	Internet Cafes/ Common Service Center/Wi Fi			yes	
	Youth Club			yes	
	Mahila Mandal			yes	

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	Power supply for Domestic Use	8100 connection	✓		
	Power supply for Agricultural Use	35 connection	✓		
	Power supply for Commercial Use	5 connection	✓		
	Road/ Street Lights	Yes.	✓		
	Electrification in Government Buildings/ Schools/ Hospitals	Yes.	✓		
	Renewable Energy Source Facilities (Y/ N)	No.	✗		
	LED Facilities		✓		
Suggestions if any:					
G.	**Sanitation Facility**				
	Public Latrine Blocks If available than Nos.	No.			
	Location Condition				
	Community Toilet (With bath/ without bath facilities)	No			
	Solid & liquid waste Disposal system available	Yes	✓		
	Any facility for Waste collection from road	Yes	✓		
Suggestions if any:					
H.	**Main Source of Irrigation Facility:**				
	TANK/POND	✓			
	STREAM/RIVER	✗			
	CANAL	✓			
	WELL	✓			
	TUBE WELL.	✓			
	OTHER (SPECIFY)	✓			Rainwater
Suggestions if any:					
I.	**Housing Condition:**				
	Kutchha/Pucca (Approx. ratio)	✓			Pucca

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	Credit Cooperative Society Agricultural Cooperative Society Milk Cooperative Society Fishermen's Cooperative Society Computer Kiosk/ e-chaupal / Mills / Small Scale Industries				No
	Other Facility				

Suggestions if any:

N.	Other Facilities	Condition		Available (YES)	Available (NO)
	1. Have these programme implemented the village?				
	2. Are there any beneficiaries in the village from the following programme?				
	3. Janani Suraksha Yojana				
	4. Kishori Shakti Yojana				
	5. Balika Samriddhi Yojana				
	6. Mid-day Meal Programme			Yes	
	7. Intergrated Child Development Scheme (ICDS)				
	8. Mahila Mandal Protsahan Yojana (MMPY)			Yes	
	9. National Food for work Programme (NFFWP)				
	10. National Social Assistance Programme			Yes	
	11. Sanitation Programme (SP)				
	12. Rajiv Gandhi National Drinking Water Mission				
	13. Swarnjayanti Gram Swarozgar Yojana				
	14. Minimum Needs Programme (MNP)				
	15. National Rural Employment Programme				
	16. Employee Guarantee Scheme (EGS)				
	17. Prime Minister Rojgar Yojana (PMRY)				
	18. Jawahar Rozgar Yojana (JRY)			Yes	
	19. Indira Awas Yaojna (IAY)				
	20. Samagra Awas Yojana (SAY)				
	21. Sanjay Gandhi Niradhar Yojana (SGNY)				
	22. Jawahar Gram Samridhi Yojana (JGSY)			Yes	
	23. Other (SPECIFY)				

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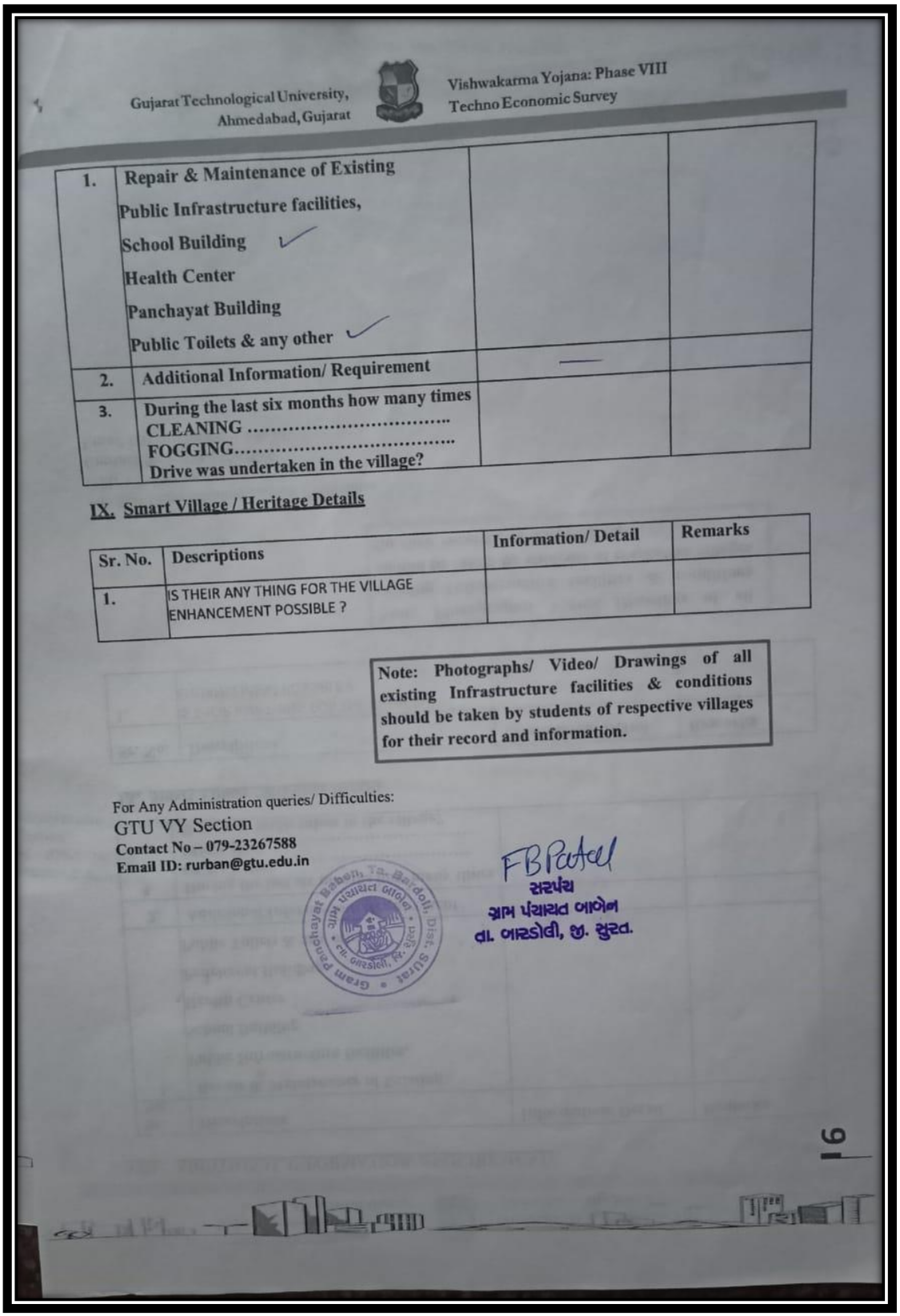

Gujarat Technological University, Ahmedabad, Gujarat

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Techno Economic Survey

1.	Repair & Maintenance of Existing Public Infrastructure facilities, School Building ✓ Health Center Panchayat Building Public Toilets & any other ✓		
2.	Additional Information/ Requirement	—	
3.	During the last six months how many times CLEANING ..... FOGGING..... Drive was undertaken in the village?		

IX. Smart Village / Heritage Details

Sr. No.	Descriptions	Information/ Detail	Remarks
1.	IS THEIR ANY THING FOR THE VILLAGE ENHANCEMENT POSSIBLE ?		

Note: Photographs/ Video/ Drawings of all existing Infrastructure facilities & conditions should be taken by students of respective villages for their record and information.

For Any Administration queries/ Difficulties:
GTU VY Section
Contact No – 079-23267588
Email ID: rurban@gtu.edu.in

Gram Panchayat Baben, Ta. Bardoli, Dist. Surat

F B Patel
સરપંચ
ગ્રામ પંચાયત બાબેન
તા. બારડોલી, જી. સુરત.

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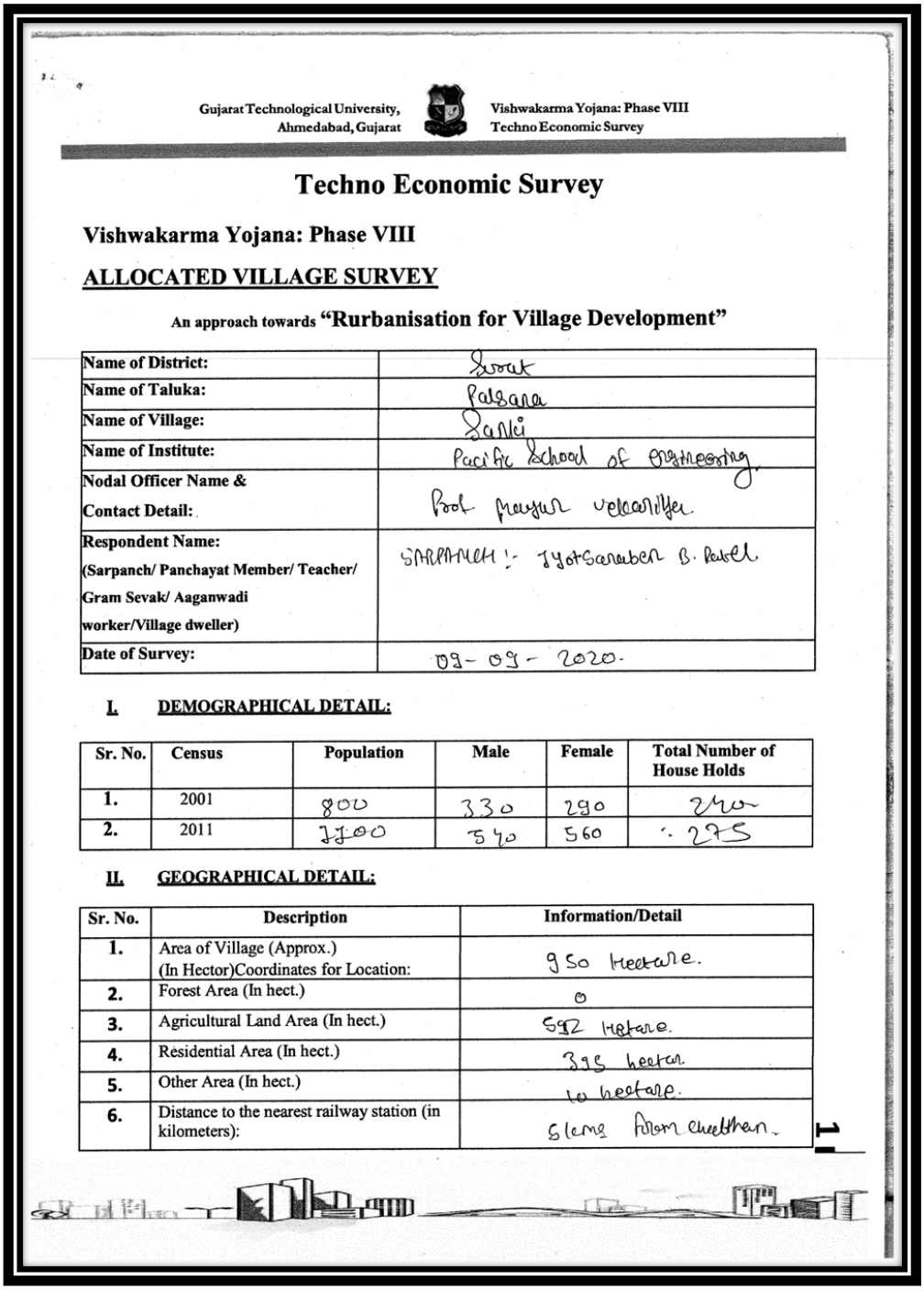
12.3 Survey form of Allocated village Scanned copy attachment in the report for part-1

Survey form of Allocated village Original copy attachment in the report for part-2



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Vishwakarma Yojana: Phase VIII
Techno Economic Survey

Techno Economic Survey

Vishwakarma Yojana: Phase VIII

ALLOCATED VILLAGE SURVEY

An approach towards "Rurbanisation for Village Development"

Name of District:	Surat
Name of Taluka:	Palsana
Name of Village:	Sanki
Name of Institute:	Pacific School of engineering.
Nodal Officer Name & Contact Detail:	Prof Pranjal Vekariya
Respondent Name: (Sarpanch/ Panchayat Member/ Teacher/ Gram Sevak/ Aaganwadi worker/Village dweller)	SARPANCH :- Jyotsanaben B. Patel
Date of Survey:	09-09-2020.

I. DEMOGRAPHICAL DETAIL:

Sr. No.	Census	Population	Male	Female	Total Number of House Holds
1.	2001	800	330	290	240
2.	2011	1200	540	560	275

II. GEOGRAPHICAL DETAIL:

Sr. No.	Description	Information/Detail
1.	Area of Village (Approx.) (In Hector)Coordinates for Location:	950 Heetare.
2.	Forest Area (In hect.)	0
3.	Agricultural Land Area (In hect.)	592 Hetare.
4.	Residential Area (In hect.)	395 heetar.
5.	Other Area (In hect.)	10 heetare.
6.	Distance to the nearest railway station (in kilometers):	5kms from chuthan.

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7.	Name of Nearest Town with Distance:	Chalthan - 8kms
8.	Distance to the nearest bus station (in kilometers):	Sarsi - 2kms
9.	Whether village is connected to all road for the any facility or town or City?	Yes

III. OCCUPATIONAL DETAILS:

Name of Three Major Occupation groups in Village	1.	Agriculture
	2.	Milk industry
	3.	

Major crops grown in the village:	1.	Wheat
	2.	Cotton Seed
	3.	Sugar cane

IV. PHYSICAL INFRASTRUCTURE FACILITIES:

Sr. No.	Descriptions	Detail	Adequate	Inadequate	Remarks
A.	**Main Source of Drinking water**				
1.	**PIPED WATER** Piped Into Dwelling Piped To Yard/Plot Public Tap/Standpipe Tube Well Or Bore Well	Tube well Borewell Pipe to Dwelling			& Hand pump available.
2.	**DUG WELL** Protected Well Un Protected Well				
3.	**WATER FROM SPRING** Protected Spring Unprotected Spring Rainwater Tanker Truck Cart With Small Tank	—	—	—	—
4.	**SURFACE WATER (RIVER/DAM/ LAKE/POND/STREAM/CANAL/** Irrigation Channel Bottled Water Hand Pump	Yes			Pond & canal.

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	Other(Specify)**Lake/ Pond**				
Suggestions if any:					
B.	**Water Tank Facility**				
	Overhead Tank	Capacity:			
	Underground Sump	Capacity:			
Suggestions if any:					
C.	**The Type of Drainage Facility**				
	A. UNDERGROUND DRAINAGE 1				
Suggestions if any:					
D.	**Road Network :All Weather/ Kutchha (Gravel)/ Black Topped pucca/ WBM**				
	Village approach road				
	Main road				
	Internal streets				
	Nearest NH/SH/MDR/ODR Dist. in kms.				
Suggestions if any:					
E.	**Transport Facility**				
	Railway Station (Y/N) (If No than Nearest Rly Station---Kms)				
	Bus station (Y/N) Condition: (If No than Nearest Bus Station---Kms)				
	Local Transportation (Auto/ Jeep/Chhakda/ Private Vehicles/ Other)				
Suggestions if any:					
F.	**Electricity Distribution**				
	(Y/N) Govt./ Private (Less than 6 hrs./ More Than 6 hrs)				

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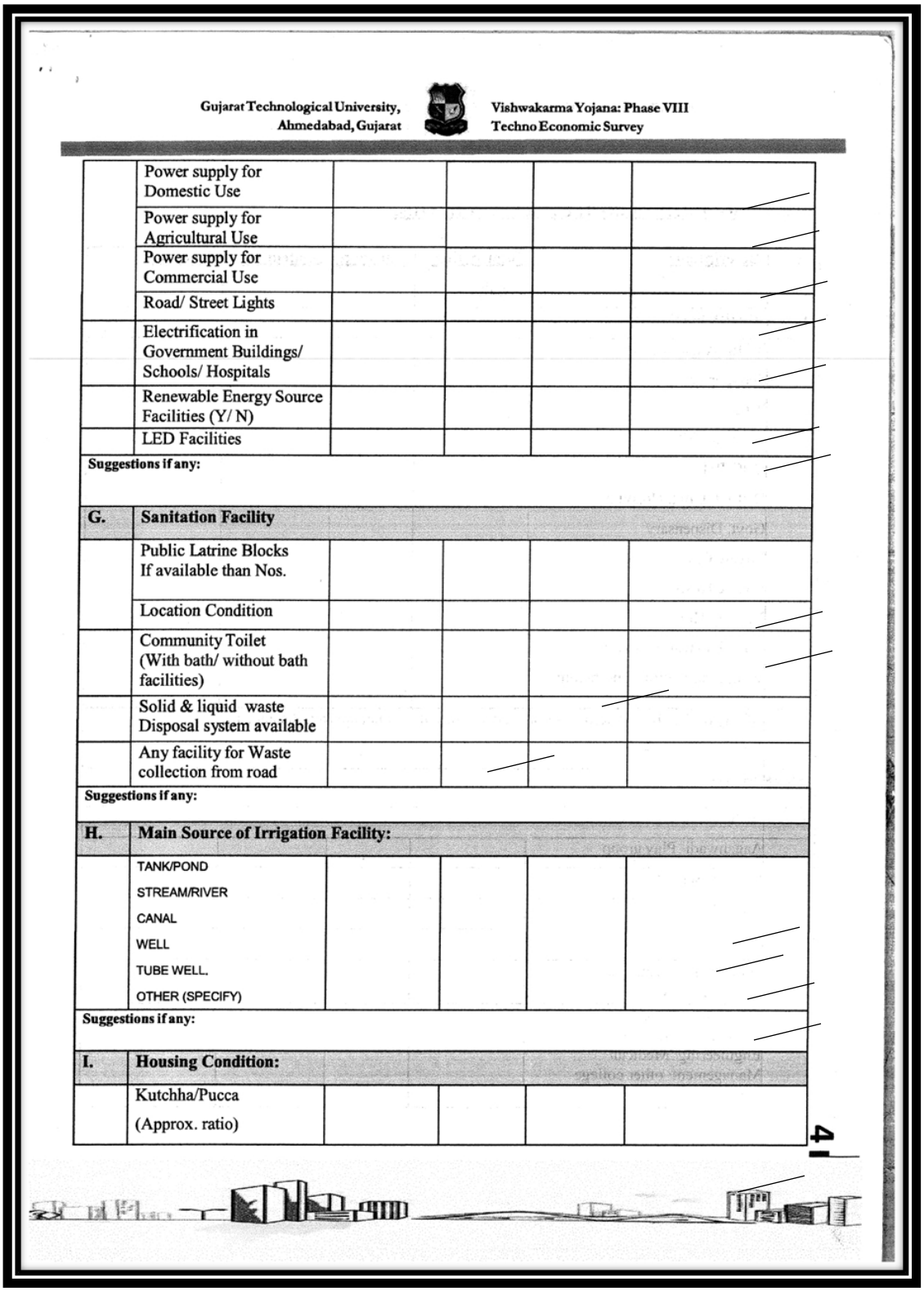

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	Power supply for Domestic Use				
	Power supply for Agricultural Use				
	Power supply for Commercial Use				
	Road/ Street Lights				
	Electrification in Government Buildings/ Schools/ Hospitals				
	Renewable Energy Source Facilities (Y/ N)				
	LED Facilities				

Suggestions if any:

G.	**Sanitation Facility**				
	Public Latrine Blocks If available than Nos.				
	Location Condition				
	Community Toilet (With bath/ without bath facilities)				
	Solid & liquid waste Disposal system available				
	Any facility for Waste collection from road				

Suggestions if any:

H.	**Main Source of Irrigation Facility:**				
	TANK/POND STREAM/RIVER CANAL WELL TUBE WELL. OTHER (SPECIFY)				

Suggestions if any:

I.	**Housing Condition:**				
	Kutchha/Pucca (Approx. ratio)				

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V. SOCIAL INFRASTRUCTURAL FACILITIES:

Sr. No.	Descriptions	Information/ Detail	Adequate	Inadequate	Remarks
J.	**Health Facilities:**				
	ICDS (Anganwadi)				
	Sub-Centre				
	PHC	—		—	
	BLOCK PHC				
	CHC/RH				
	District/ Govt. Hospital				
	Govt. Dispensary				
	Private Clinic				
	Private Hospital/ Nursing Home				
	AYUSH Health Facility				
	sonography /ultrasound facility				
	If any of the above Facility is not available in village than approx. distance from village: ……kms.				
Suggestions if any:					
K.	**Education Facilities:**				
	Aaganwadi/ Play group	—		—	
	Primary School	—		—	
	Secondary school		—		
	Higher sec. School				
	ITI college/ vocational Training Center				
	Art, Commerce& Science /Polytechnic/ Engineering/ Medical/ Management/ other college facilities			—	

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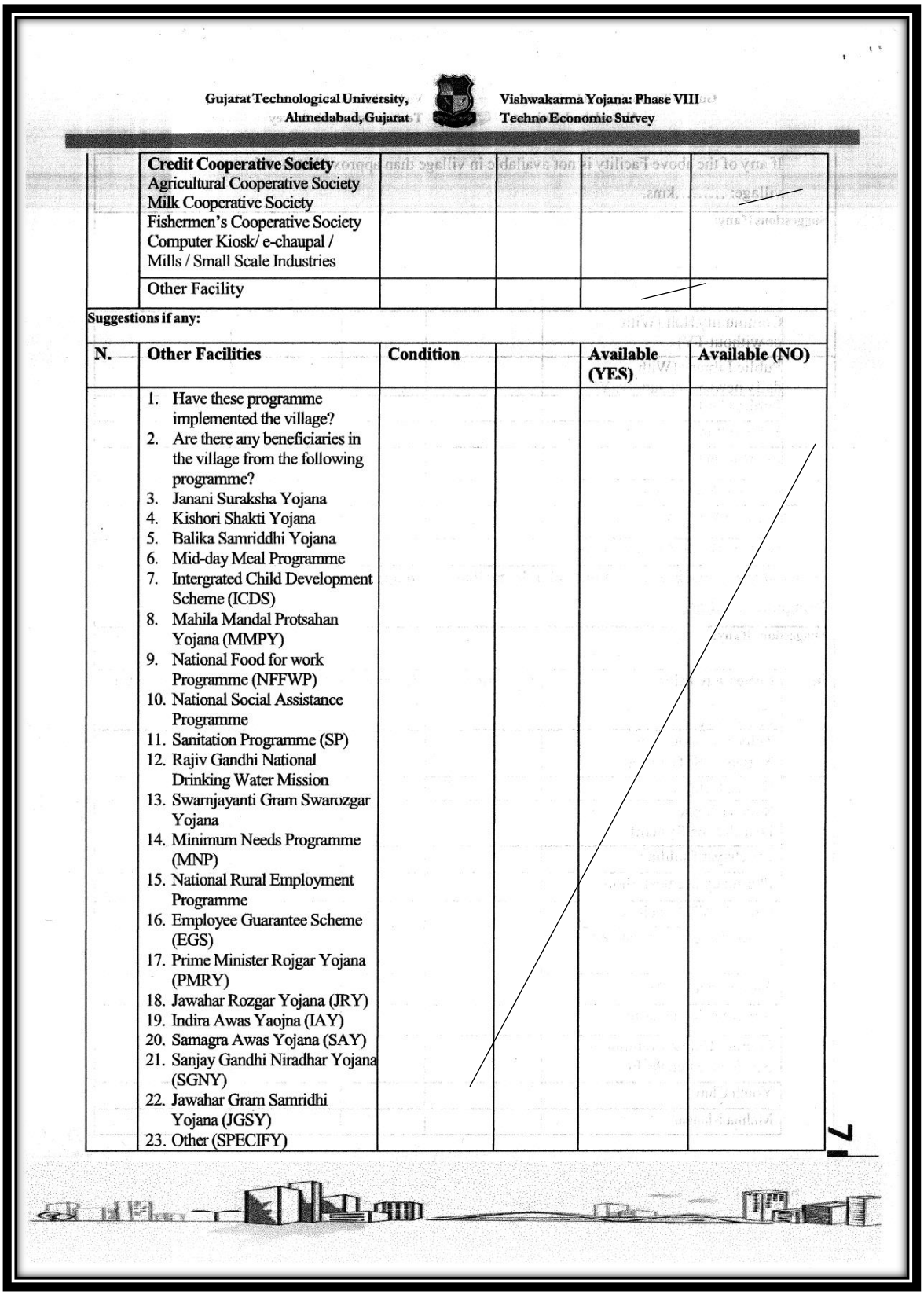
	If any of the above Facility is not available in village than approx. distance from village: .....kms.
Suggestions if any:	

L.	Socio- Culture Facilities	Condition	Location	Available (YES)	Available (NO)
	Community Hall (With or without TV)				
	Public Library (With daily newspaper supply: Y/N)				
	Public Garden				
	Village Pond				
	Recreation Center				
	Cinema/ Video Hall				
	Assembly Polling Station				
	Birth & Death Registration Office				

If any of the above Facility is not available in village than approx. distance from village: .....kms.

Suggestions if any:

M.	Other Facilities	Condition	Location	Available (YES)	Available (NO)
	Post-office				
	Telecommunication Network/ STD booth				
	General Market				
	Shops (Public Distribution System)				
	Panchayat Building				
	Pharmacy/Medical Shop				
	Bank & ATM Facility				
	Agriculture Co-operative Society				
	Milk Co-operative Soc.				
	Small Scale Industries				
	Internet Cafes/ Common Service Center/Wi Fi				
	Youth Club				
	Mahila Mandal				



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	Credit Cooperative Society Agricultural Cooperative Society Milk Cooperative Society Fishermen's Cooperative Society Computer Kiosk/ e-chaupal / Mills / Small Scale Industries				
	Other Facility				

Suggestions if any:

N.	Other Facilities	Condition		Available (YES)	Available (NO)
	1. Have these programme implemented the village? 2. Are there any beneficiaries in the village from the following programme? 3. Janani Suraksha Yojana 4. Kishori Shakti Yojana 5. Balika Samriddhi Yojana 6. Mid-day Meal Programme 7. Intergrated Child Development Scheme (ICDS) 8. Mahila Mandal Protsahan Yojana (MMPY) 9. National Food for work Programme (NFFWP) 10. National Social Assistance Programme 11. Sanitation Programme (SP) 12. Rajiv Gandhi National Drinking Water Mission 13. Swarnjayanti Gram Swarozgar Yojana 14. Minimum Needs Programme (MNP) 15. National Rural Employment Programme 16. Employee Guarantee Scheme (EGS) 17. Prime Minister Rojgar Yojana (PMRY) 18. Jawahar Rozgar Yojana (JRY) 19. Indira Awas Yaojna (IAY) 20. Samagra Awas Yojana (SAY) 21. Sanjay Gandhi Niradhar Yojana (SGNY) 22. Jawahar Gram Samridhi Yojana (JGSY) 23. Other (SPECIFY)				

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VI. SUSTAINABLE /GREEN INFRASTRUCTURE FACILITIES:

Sr. No.	Descriptions	Information/ Details	Adequate	Inadequate	Remarks
1.	Adoption of Non-Conventional Energy Sources/ Renewable Energy Sources				
2.	Bio-Gas Plant Solar Street Lights Rain Water Harvesting System				
3.	Any Other				

VII. DATA COLLECTION FROM VILLAGE

Sr. No.	Descriptions	Information/ Details	Adequate	Inadequate	Remarks
1.	Village Base Map Available: Hard Copy/Soft Copy				
2.	Recent Projects going on for Development of Village				
3.	Any NGO working for village development				
4.	Any natural calamity in the village during the last one year: EARTHQUAKES FLOODS CYCLONE DROUGHT LANDSLIDES AVALANCHE OTHER (SPECIFY)				

Gujarat Technological University, Ahmedabad, Gujarat

Vishwakarma Yojana: Phase VIII
Techno Economic Survey

VIII. ADDITIONAL INFORMATION/ REQUIREMENT:

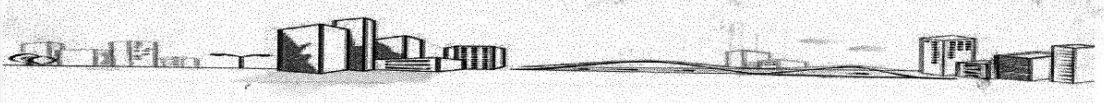
Sr. No.	Descriptions	Information/ Detail	Remarks
1.	Repair & Maintenance of Existing Public Infrastructure facilities, School Building Health Center Panchayat Building Public Toilets & any other		
2.	Additional Information/ Requirement		
3.	During the last six months how many times CLEANING ..... FOGGING..... Drive was undertaken in the village?		

IX. Smart Village / Heritage Details

Sr. No.	Descriptions	Information/ Detail	Remarks
1.	IS THEIR ANY THING FOR THE VILLAGE ENHANCEMENT POSSIBLE ?		

Note: Photographs/ Video/ Drawings of all existing Infrastructure facilities & conditions should be taken by students of respective villages for their record and information.

For Any Administration queries/ Difficulties:
GTU VY Section
Contact No – 079-23267588
Email ID: rurban@gtu.edu.in



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VIII. ADDITIONAL INFORMATION/ REQUIREMENT:

Sr. No.	Descriptions	Information/ Detail	Remarks
1.	Repair & Maintenance of Existing Public Infrastructure facilities, School Building Health Center Panchayat Building Public Toilets & any other	✓	Anganwadi, Pond, Community hall,
2.	Additional Information/ Requirement	—	—
3.	During the last six months how many times CLEANING ..... FOGGING..... Drive was undertaken in the village?	✓	

IX. Smart Village / Heritage Details

Sr. No.	Descriptions	Information/ Detail	Remarks
1.	IS THEIR ANY THING FOR THE VILLAGE ENHANCEMENT POSSIBLE ?	Recreational, Safety wall of Pond, Pharmacy Store, etc.	✓

Note: Photographs/ Video/ Drawings of all existing Infrastructure facilities & conditions should be taken by students of respective villages for their record and information.

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ગ્રામ પંચાયત સાંકી
તા. પલસાણા, જિ. સુરત

ગ્રામ પંચાયત સાંકી તા. પલસાણા, જી. સુરત

સરપંચ
ગ્રામ પંચાયત સાંકી
તા. પલસાણા, જિ. સુરત

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12.4CANVAS SHEETS

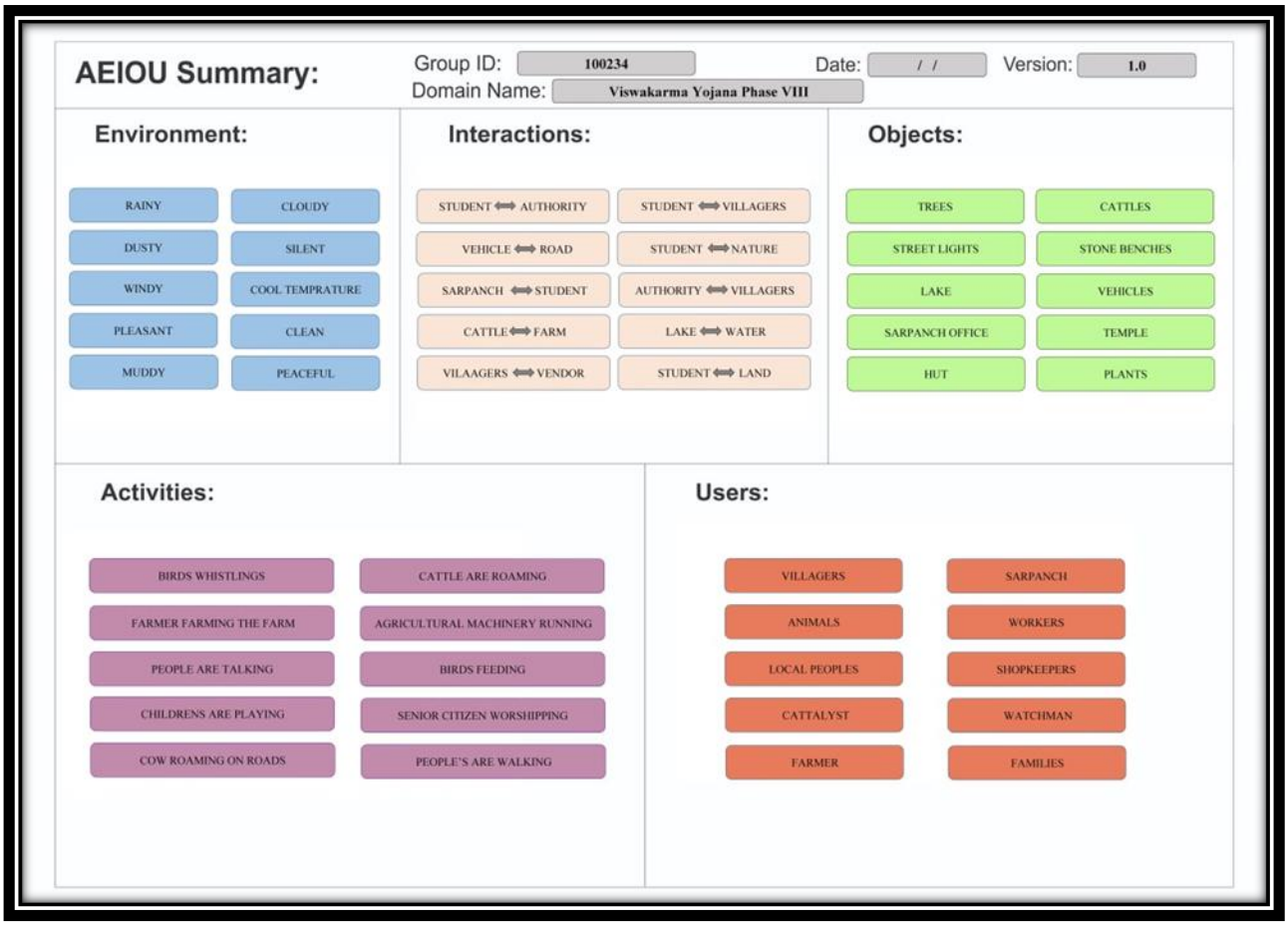


Figure 49: AEIOU canvas

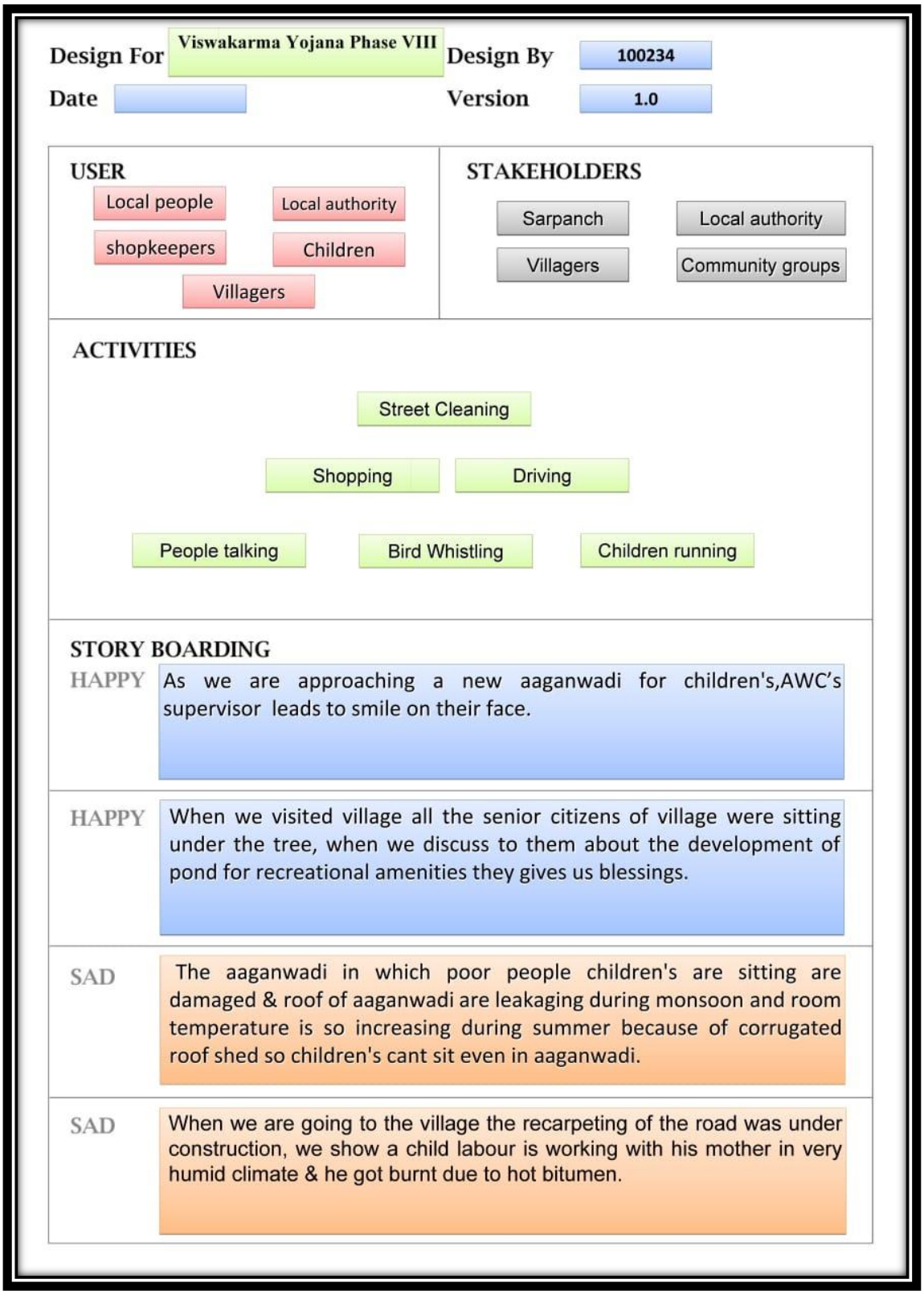


Figure50: Empathy canvas

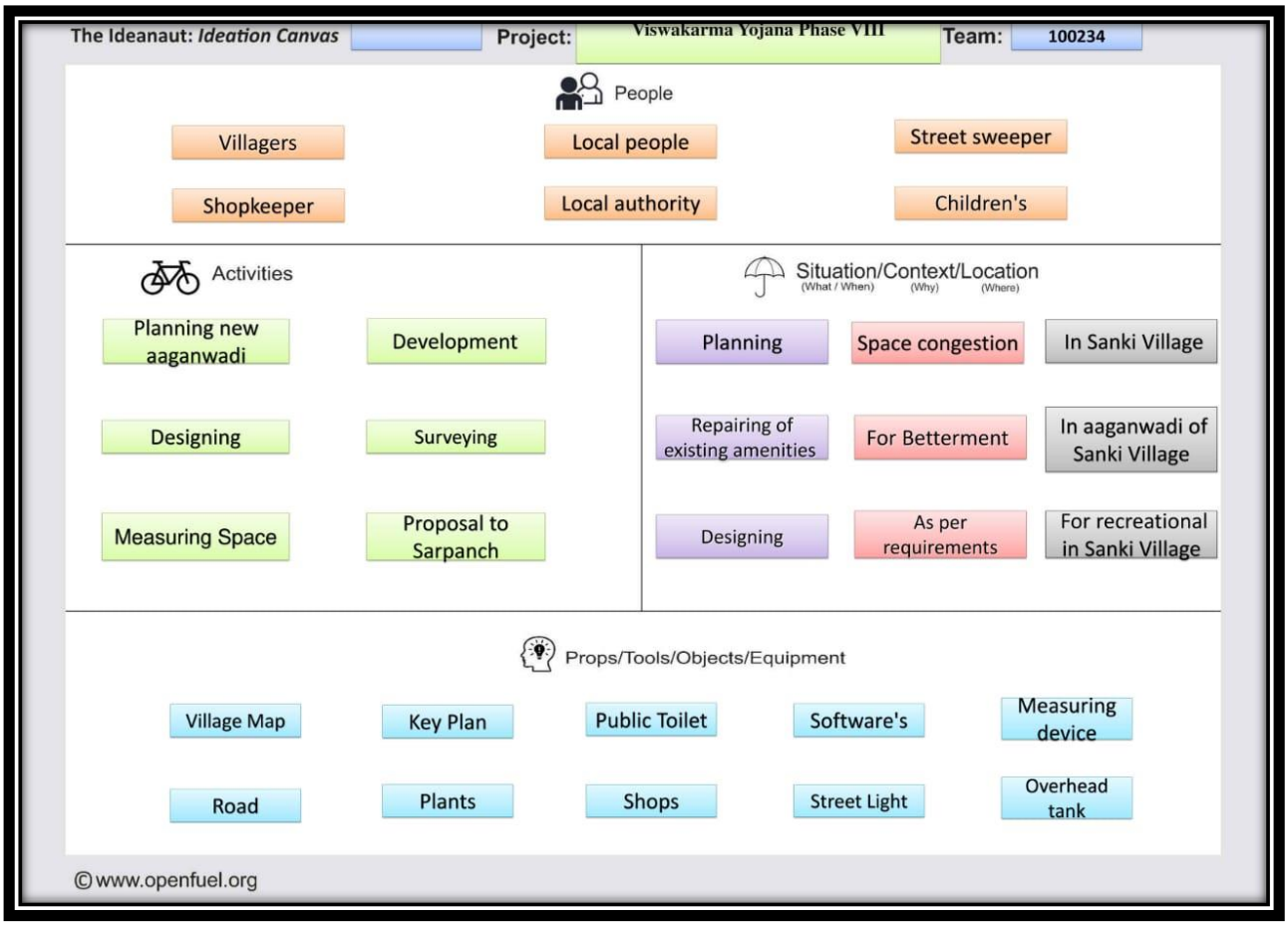


Figure51: Ideation canvas

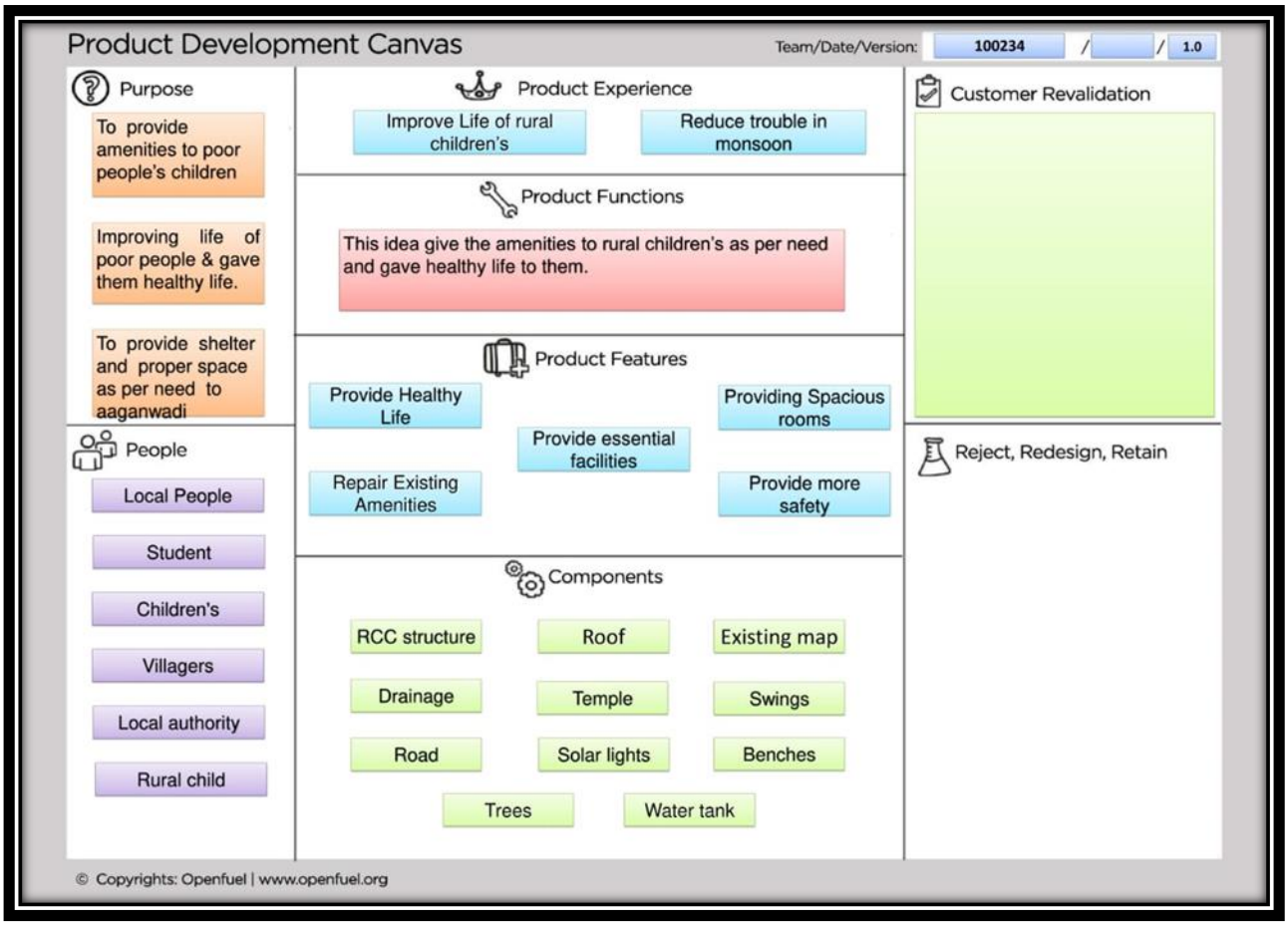


Figure52: PDC canvas

12.5 Summary details of all the villages in table form as Part-1

Sr.No.	Village Name	Branch	Part-1 Design
1	Sanki	Civil Engineering	Aaganwadi
			Pond
			Pharmacy Store
			Entrance Gate
			Public library
			Rainwatervharvesting system
2	Kholeshwar	Civil Engineering	Aaganwadi
			Public Toilet
			PHC
			Entrance Gate
3	Bhairav	Civil Engineering	Public Toilet
			Bus Stand
			E-Center
			PHC
			Waste Collection

	VILLAGE GAP ANALYSIS				
Village Facilities	**Planning Commission/UDPFI Norms**	**Village Name:**	**SANKI**		
		Population: 1100			
		Existing	**Required as per Norms**	**Smart Village/Cities/ Heritage Future Projection Design**	**Gap**
Social Infrastructure Facilities					
Education					
Aaganwadi	Each or Per 2500 Population	1	1		Extension & Reconstruction Required
Primary School	Each Per 2500 population	1	0		0
Secondary School	Per 7,000 population	0	0		0
Higher Secondary School	Per 15,000 population	0	0		0

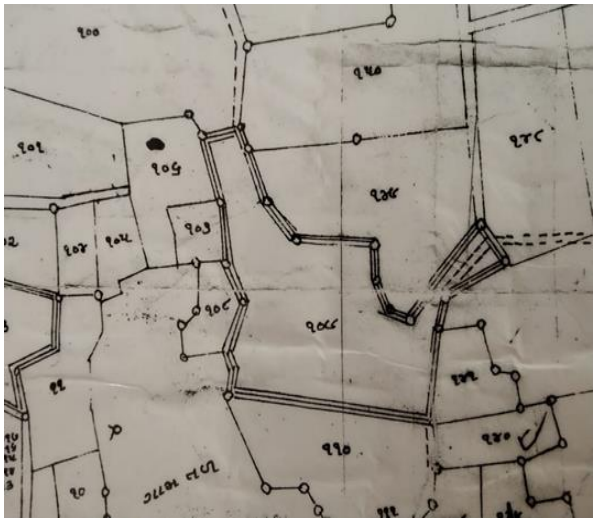
College	Per 1,25,000 population	1	0		0
Tech.Training Institute	Per 1,00,000 population	0	0		0
Agriculture Research Center	Per 1,00,000 population	0	0		0
Skill Development Center	Per 1,00,000 population	0	0		0
Health Facility					0
Govt/Panchayat Dispentary or Sub PHC or health Center	Each Village	0	1		Medical Store Required
Primary Health & Child Health Center	Per 20,000 population	0	0		0
Child Welfare & Maternity Home	Per 10,000 population	0	0		0
Multispecialty Hospital	Per 1,00,000 population	0	0		0
Public Latrines	1 for 50 families	0	1		Required

Table:14 Gap analysis of allocated village

12.6 Drawings

All the drawings and images are attached in their respective chapters along with designs and theirlisting are mentioned in the list of figures along with their page numbers. And we have added A3sheetsofproposed designsat the end oftheVishwakarmaYojanaPhaseVIIIpart1 report.

12.7 Summary of Good Photographs in Table Format



12.8 Village Interaction with sarpanch Report with the photograph

Village Interaction with Sarpanch Letter

Vishwakarma Yojna Phase VIII
Sanki village , Tal.Palsana , Dist. Surat
Village code: 524227

Subject: village interaction form with sarpanch of sanki village

I sarpanch of sanki village undersigned gives an approval of doing village interaction activity under Vishwakarma Yojana Phase VIII- an approach towards rurbanization by students of pacific school of engineering,surat named Nikesh Mod (181123106032) , Umang Parikh (181123106036).

Date: 08/10/2020

Sign:

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તા. પલસાણા, જિ. સુરત

12.9 Sarpanch Letter giving information about the village development

Approval Letter For Proposed Design Approval

Vishwakarma Yojna Phase VIII
Sanki village , Tal.Palsana , Dist. Surat
Village code: 524227

Subject: approval of design proposal for sanki village

I sarpanch/talati of sanki village undersigned gives an approval of following main design proposal given under Vishwakarma Yojana Phase VIII- an approach towards rurbanization by students of pacific school of engineering,surat named Nikesh Mod (181123106032) and Umang Parikh (181123106036).

Approved main design proposal of part-1

1. Aanganwadi
2. Pond retaining wall
3. Enterance gate
4. Pharmacy store
5. Solar panel
6. Rain water harvesting

Date: 09/03/2021

Sign:

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તા. પલસાણા, જિ. સુરત

12.10 Comprehensive report preparation as per format

Sanki is a Village in Palsana Taluka in Surat District of Gujarat State, India. It is located 21 KM towards south east from District head quarters Surat and 8 Km from palsana. Sanki Local Language is Gujarati. Sanki Village Total population is 1100 and number of houses are 275. Female Population is 49%. Village literacy rate is 82.67% and the Female Literacy rate is 81.14%.we have selected Ena village of Palsana taluka as our ideal village and baben village of Bardoli as a smart village. both this village are well developed by the facilities and the livelihood by the villagers and panchayat.

The Sanki Village has its gram panchayat office. The main crops grown in village are Sugarcane ,water shell nuts,cotton. There are water tanks, stationary, shops,school, hand pumps, Anganvadi, temple,ATMs,. In Vishwakarma Yojana phase I we have done 6 designs for village improvement and making sanki village as a smart village concept. We have designed many needy infrastructures and facilities such as,

- enterance gate
- pharmacy store
- anaganwadi restoration
- retaining wall around pond
- rain water harvesting
- public library.

we have taken a idea of this design by visiting and survey of our smart and ideal villages.
theena village has enterance gate , aanganwadi with latest technology , a library , a pharmacy store. etc. also a baben village has a broad paved roads, with a rainwater harvesting system and a lake of baben has a retaining wall sand safety wall , a community hall with large space developed and skill development center etc, other design we will fulfill in our next part-2 project.

Nodel officer statement:-

By providing this required facility to village, development and growth of village can be possible. So ultimately migration rate and urban city pressure can be reduced and livelihood of village dweller will increase All the design which is given as above are very helpful for future development of village and village people for their enhancement and prosperity. I admire these students to do work related to civil engineering people and hope these works is help to improve and understand their skills and make it even batter. I am sure they got deep knowledge about development of village and various infrastructure facility design of village.

Chapter: 13

From the Chapter- 9 future designs of the aspects (Feasibility, Construction, Operation and maintenance of various design options in Rural Areas along with cost with AutoCAD designs / planning with any software

13.1 Design Proposals: Observation & brief write up about each design from 13.1.1 to 13.1.6

Social Design: safety wall of pond and cricket ground

We have designed a safety wall on the periphery of the pond 2,3 and the estimation for the cricket ground development at hadpativas ground.

Sustainable Design: community hall restoration

We have redesigned a existing hall and some renovation in this is required.

Community hall is a public location where members of a community gather for group activities, events, festivals and social purpose. They may sometimes be open for whole community or for a specialized group example Mahilamandal hall. A community hall of village generally consists of a hall , storage or kitchen area and washroom

Physical design: Grain Godown& skill development center

In the Sanki village there is no any Godown for storage of agriculture. So according to the feedback given by the villagers, storage Godownshould be there in the village as people are engaged in agriculture field.So that we have designed one grain Godownfor the urgent requirement of storage space for the villagers.

Heritage Village Design: Ev Auto-rikshaw stand

The Sanki village has no transporationfaciltyat the village approach road. So that we have designed the one time investment electric auto rikshaw stand.

13.1.1 Safety Wall of Pond

The pond has depth of upto 6mtr. & has an area of 1 hectare of both ponds.

There is a 2 pond situated at the interior part of sanki village which is excavated for the storage of storm water & rain water but it has no safety wall around the periphery of the pond.

We can gave a design of retaining wall in previous semester to retain the soil around the periphery of pond, Now we can gave design of safety wall at front side of pond (Village side) for the safety purpose & to prevent falling of children & people of village living near these pond.

We can give design of safety wall on the base of retaining wall which we gave in previous semester.

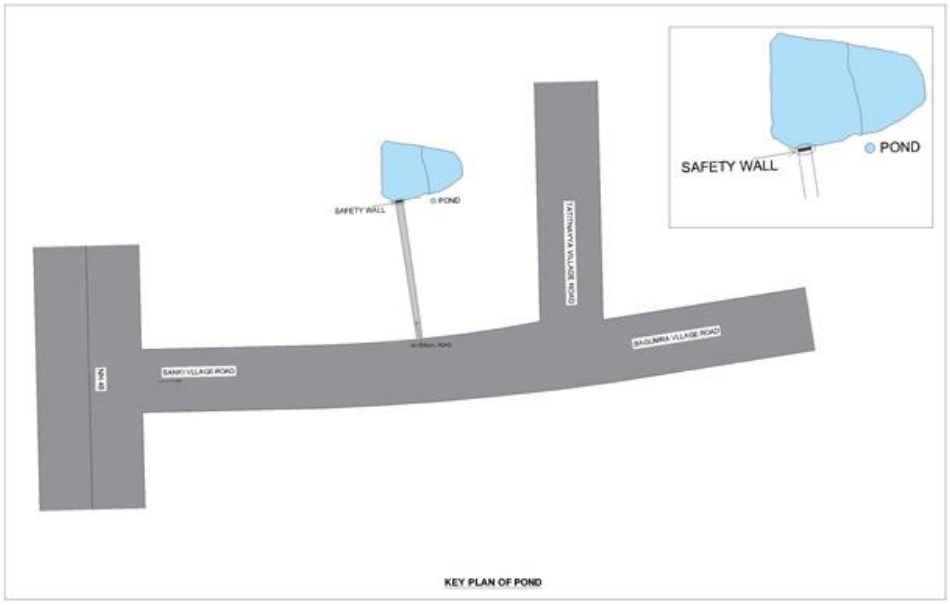
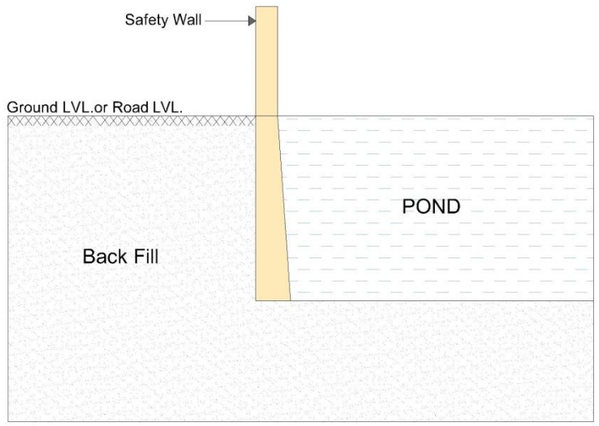


Figure 53: key plan of pond2,3

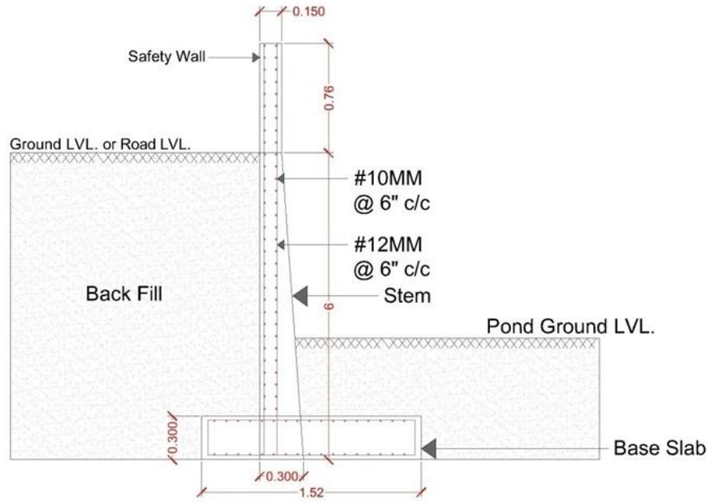
Measurement Sheet							
Sr. No.	Description	No.	Length	Width	Height	Quantity	Total Quantity
1	R.C.C. Work	1	15	0.150	0.76	1.71 Cu.m.	
2	Plastering Work	2	15	-	0.76	22.8	25.28 Cu.m.
	Parapet Top	1	15	0.150	-	2.25	
	Side Wall	2	0.150	-	0.76	0.230	
3	Steel	1	1	1	1	135 Kg.	
	1% of total r.c.c.						

Abstract Sheet					
Sr. No.	Description	Quantity	Rate	Per	Amount
1	R.C.C. Work	1.71	3500	m^3	5985.00
2	Plastering Work	25.28	900	m^2	22752.00
3	Steel	135	65	kg	8775.00
				Total	37512.00/-



SAFETY WALL ELEVATION

VISHWAKARMA YOJNA PHASE : VIII
SAFETY WALL ELEVATION
INSTITUTE : PACIFIC SCHOOL OF ENGINNERING
VILLAGE : SANKI
NODAL OFFICER : Prof. MAYUR VEKARIYA



SAFETY WALL SECTION

VISHWAKARMA YOJNA PHASE : VIII
SAFETY WALL SECTION
INSTITUTE : PACIFIC SCHOOL OF ENGINNERING
VILLAGE : SANKI
NODAL OFFICER : Prof. MAYUR VEKARIYA

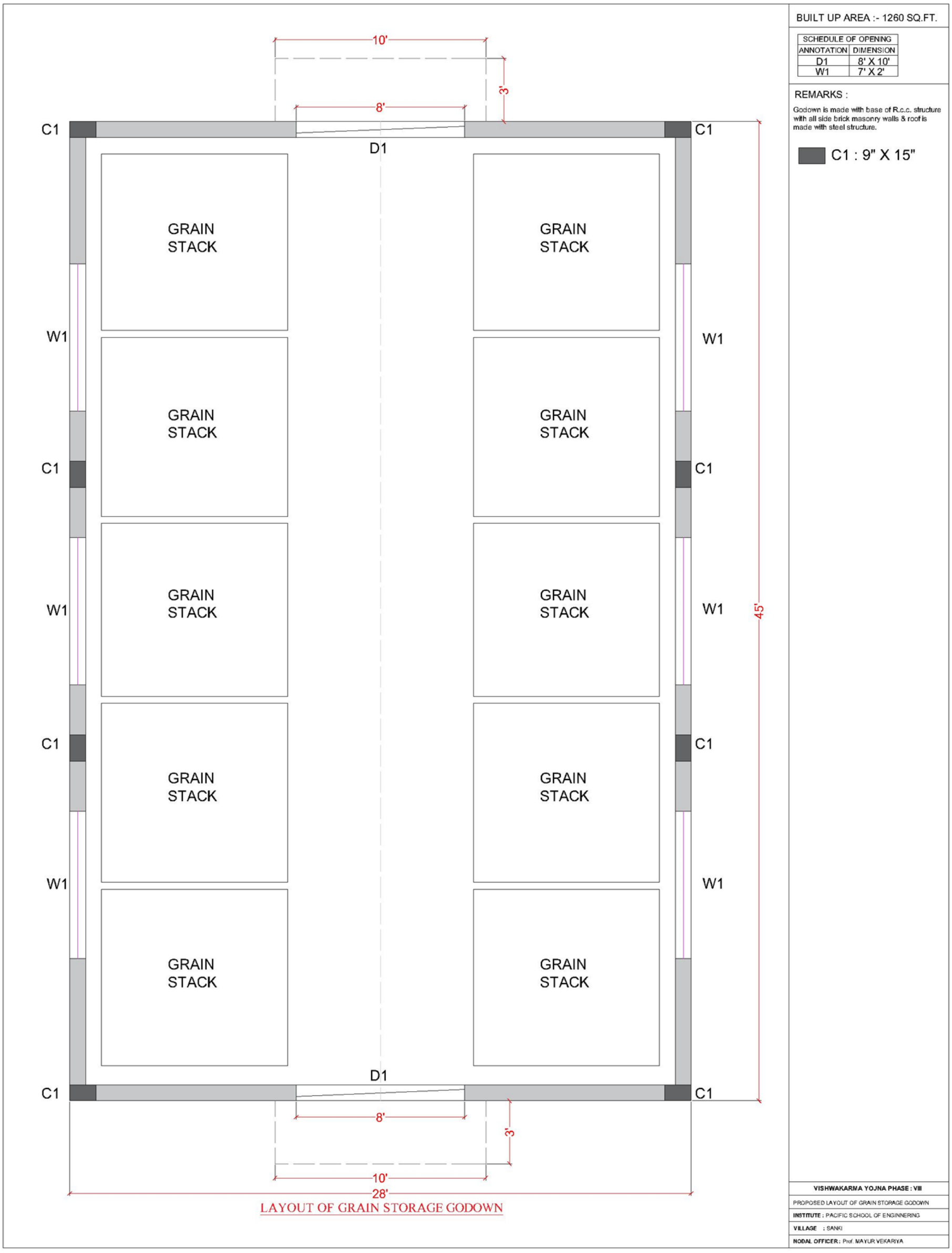
13.1.2 Godown for grain storage:

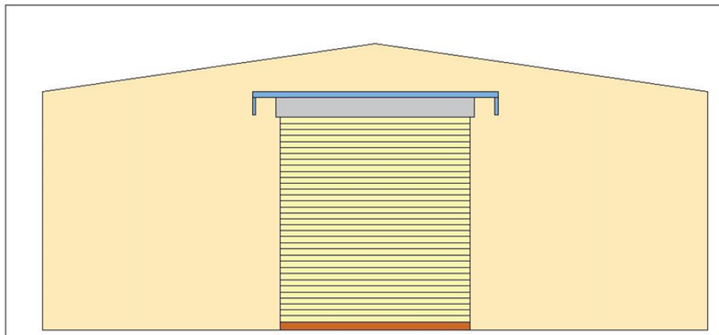
In the Sanki village there is no any Godown for storage of agriculture. So according to the feedback given by the villagers, storage Godown should be there in the village as people are engaged in agriculture field.So that we have designed one grain Godown for the urgent requirement of storage space for the villagers and the crops in the village cultivated can get a safe and large storage place near the community hall of the village.

Measurement Sheet								
Sr. No.	Description	No.	Length	Width	Height/ Depth	Quantity	Total Quantity	Unit
	R.C.C. Work							
1	Footing	08	6	6	1	36	400.17	Cu.Ft.
2	Column	08	1.25	0.75	15	112.5		Cu.Ft.
3	Ground Beam A	02	45	0.75	1.25	84.37		Cu.Ft.
	Ground Beam B	02	28	0.75	1.25	52.5		Cu.Ft.
4	Pile	02	0.75 Dia		6	5.30		Cu.Ft.
5	Top Beam A	02	45	0.75	1	67.5		Cu.Ft.
6	Top Beam B	02	28	0.75	1	42		Cu.Ft.
	Brick Masonry							
1	Side wall A	02	45	0.75	9	607.5	796.5	Cu.Ft.
	Front/Back wall	02	28	0.75	9	189		Cu.Ft.
	Deduct							
1	Rolling shutter	02	8	0.75	9	108	222.75	Cu.Ft.
2	Windows	06	7	0.75	1.5	47.25		Cu.Ft.
3	Column	08	1.25	0.75	9	67.5		Cu.Ft.
	Plastering							
1	Side wall A	04	45	-	9	1620	2628	Sq.Ft.
	Front/Back wall	04	28	-	9	1008		Sq.Ft.
	Deduct							
1	Rolling shutter	04	8	-	9	288	504	Sq.Ft.
2	Windows	12	7	-	1.5	126		Sq.Ft.
3	Column	08	1.25	-	9	90		Sq.Ft.
	P.C.C.	01	28	45	0.33	415.8	415.8	Cu.Ft.
	Roof	01	28	45	-	1260	1260	Sq.Ft.
	Rolling shutter	02	8	10	-	160	160	Sq.Ft.

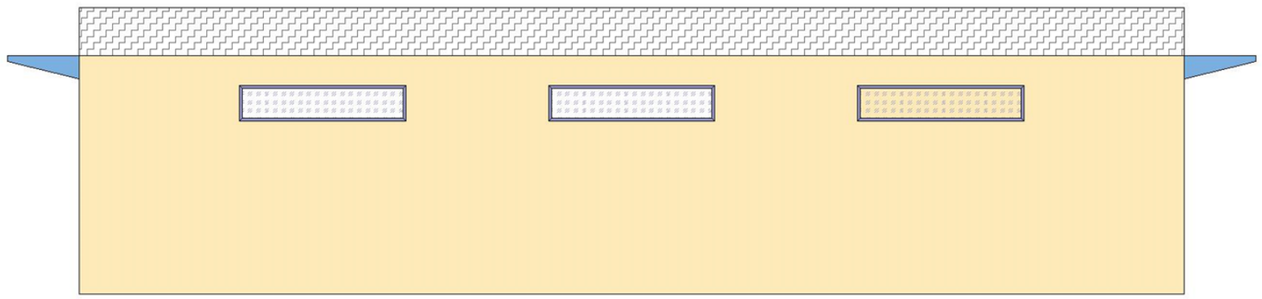
	Windows Jali	06	7	-	1.5	63	63	Sq.Ft.
	Painting							
1	Side wall A	04	45	-	9	1620	2628	Sq.Ft.
	Front/Back wall	04	28	-	9	1008		Sq.Ft.
	Deduct							
1	Rolling shutter	04	8	-	9	288	504	Sq.Ft.
2	Windows	12	7	-	1.5	126		Sq.Ft.
3	Column	08	1.25	-	9	90		Sq.Ft.

Abstract Sheet					
Sr. No.	Description	Quantity	Rate	Per	Amount
1	R.C.C. Work	400.17	255	Cu.Ft.	102043.35
2	Brick Masonry	573.75	245	Cu.Ft.	140568
3	Plastering	2124	90	Sq.Ft.	191160
4	P.C.C.	415.8	180	Cu.Ft.	74844
5	Roof	1260	140	Sq.Ft.	176400
6	Rolling shutter	160	190	Sq.Ft.	30400
7	Window Jali	63	110	Sq.Ft.	6930
8	Painting	2124	25	Sq.Ft.	53100
				Total	**7,75,445/-**


BUILT UP AREA :- 1260 SQ.FT.
SCHEDULE OF OPENING
ANNOTATION | DIMENSION
D1 | 8' X 10'
W1 | 7' X 2'
REMARKS :
Godown is made with base of R.c.c. structure with all side brick masonry walls & roof is made with steel structure.
C1 : 9" X 15"
10'
3'
8'
C1
D1
C1
GRAIN STACK
W1
W1
C1
W1
C1
W1
45'
D1
C1
C1
8'
3'
10'
28'
LAYOUT OF GRAIN STORAGE GODOWN
VISHWAKARMA YOJNA PHASE : VIII
PROPOSED LAYOUT OF GRAIN STORAGE GODOWN
INSTITUTE : PACIFIC SCHOOL OF ENGINNERING
VILLAGE : SANKI
NODAL OFFICER : Prof. MAYUR VEKARIYA

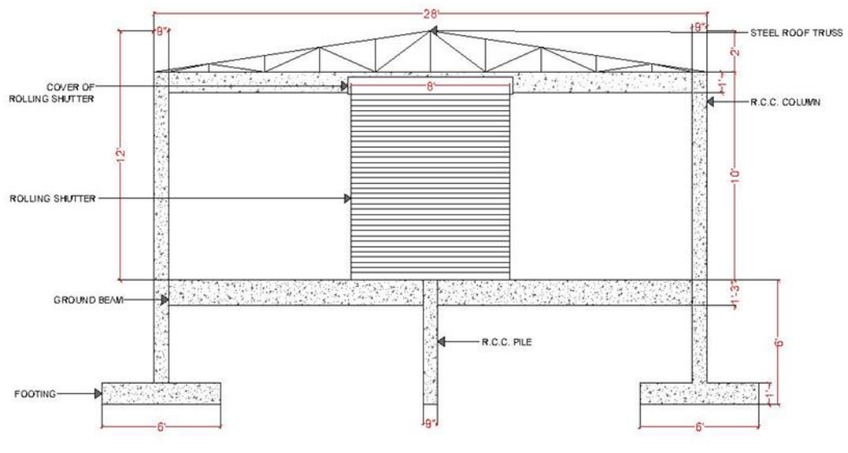


ELEVATION OF GRAIN STORAGE GODOWN
(FRONT VIEW)

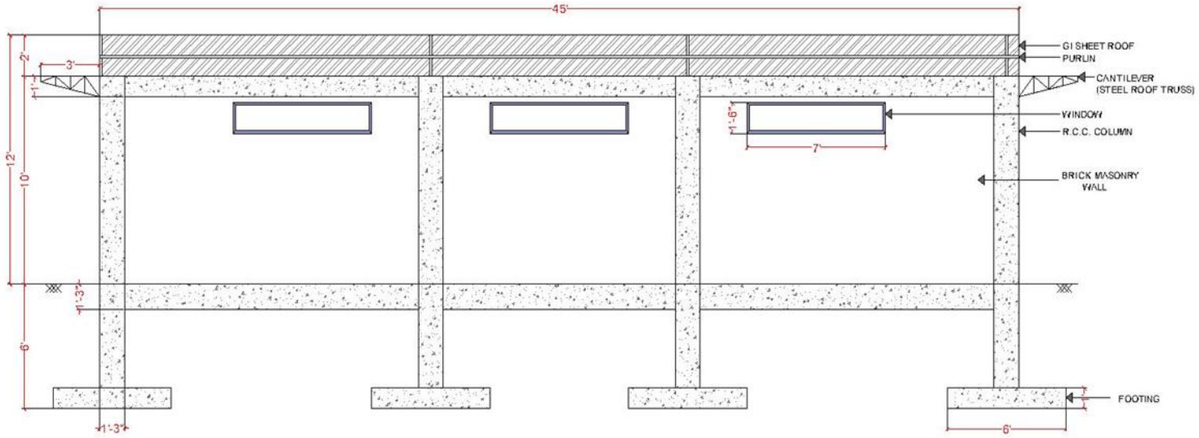


ELEVATION OF GRAIN STORAGE GODOWN
(SIDE VIEW)

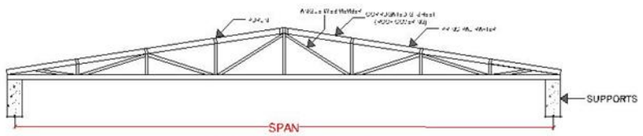
VISHWAKARMA YOJNA PHASE-VIII
PROPOSED ELEVATION OF GRAIN STORAGE GODOWN
INSTITUTE : PACIFIC SCHOOL OF ENGINEERING
VILLAGE : SANKI
NODAL OFFICER : PROF. [illegible]



SECTION OF GRAIN STORAGE GODOWN
(FRONT VIEW)



SECTION OF GRAIN STORAGE GODOWN
(SIDE VIEW)



SECTION OF STEEL ROOF TRUSS

VISHWAKARMA YOJNA PHASE : VIII
PROPOSED SECTION OF GRAIN STORAGE GODOWN
INSTITUTE : PACIFIC SCHOOL OF ENGINNERING
VILLAGE : SANKI
NODAL OFFICER : Prof. MAYURVEKARIYA

13.1.3 Community hall restoration

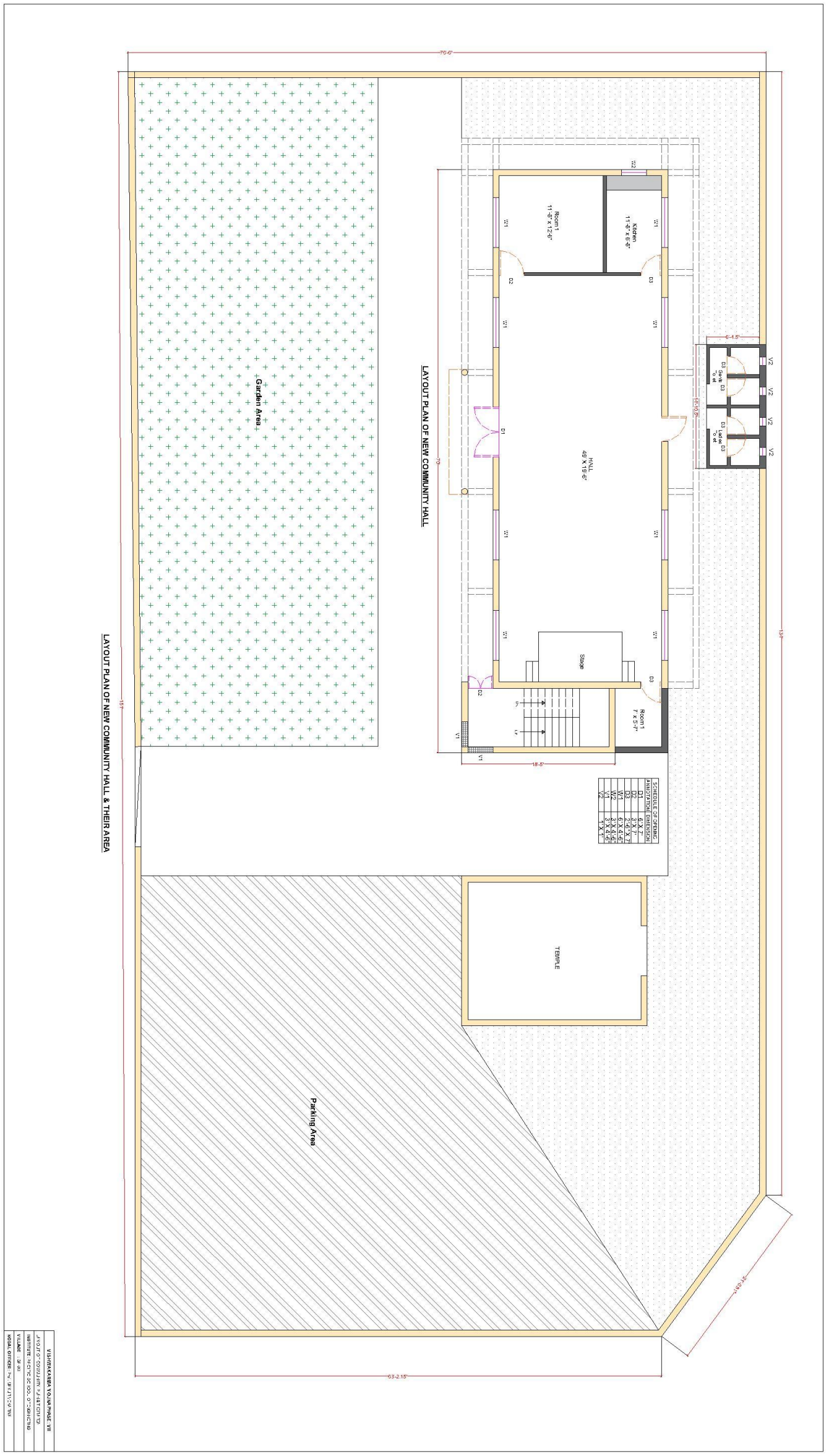
The existing building of community hall is located near the pond 1 of village and the hall is totally damaged by its structure and the leakage problem.

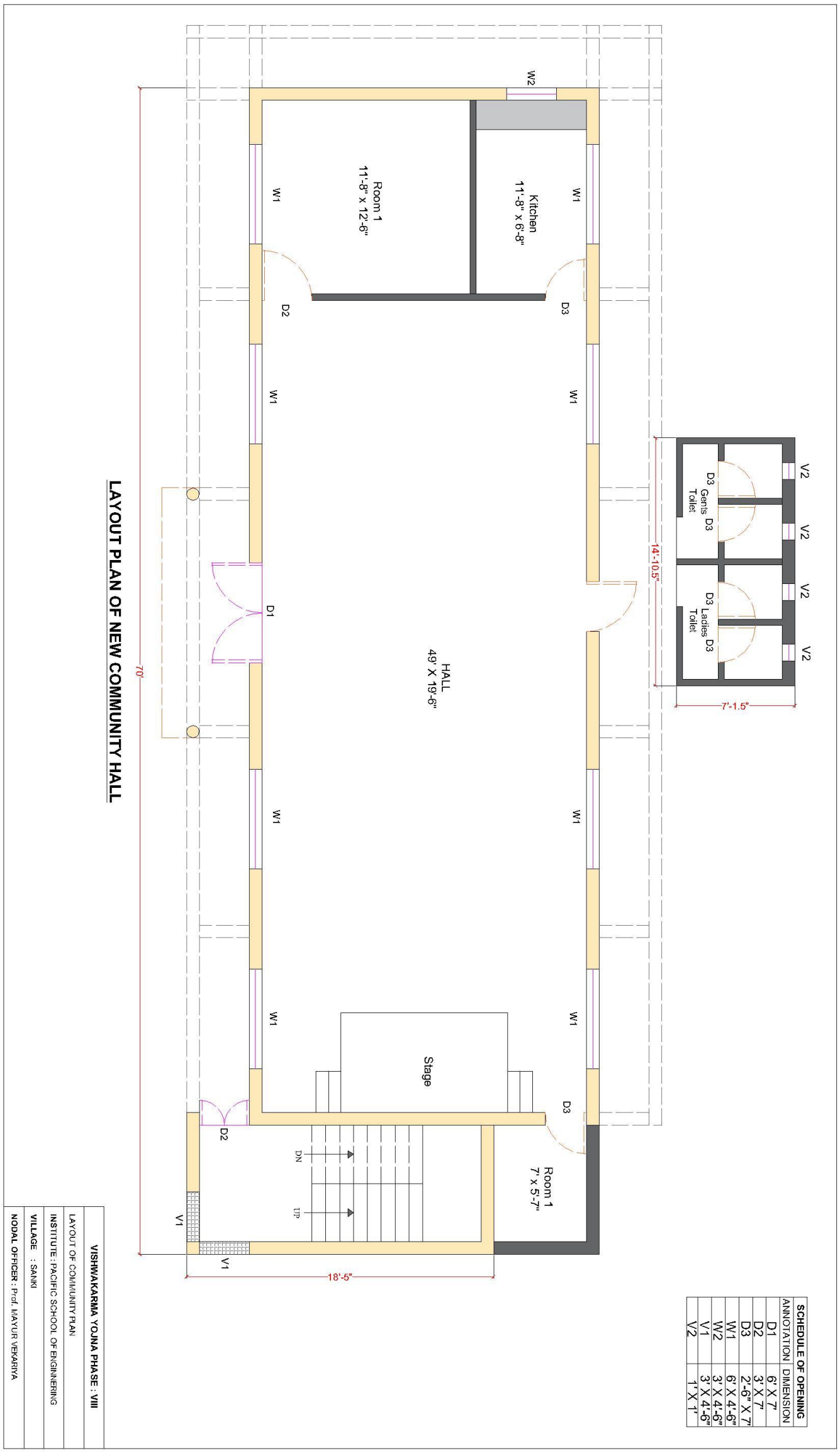
It needs to be restoration by some engineering works and also some changes in its planning is required so we have estimated the renovation cost and some planning concept for this hall so it can be usefull for villagers as well as for rental to panchayat.

Measurement Sheet								
Sr. No.	Description	No.	Length	Width	Height/ Depth	Quantity	Total Quantity	Unit
	R.C.C. Work							
1	Pile	05	0.75 Dia		6	13.23	218.61	Cu.Ft.
2	Column	05	0.75	0.75	8	22.5		Cu.Ft.
3	Ground Beam A	02	14.87	0.75	1	22.30		Cu.Ft.
4	Ground Beam B	02	7.12	0.75	1	10.68		Cu.Ft.
5	Ground Beam C	01	12.58	0.75	1	9.43		Cu.Ft.
6	Slab Beam A	02	14.87	0.75	1	22.30		Cu.Ft.
7	Slab Beam B	02	7.12	0.75	1	10.68		Cu.Ft.
8	Slab Beam C	01	12.58	0.75	1	9.43		Cu.Ft.
9	Lintel	01	35	0.375	0.25	3.28		Cu.Ft.
8	Room Slab	02	7	5.84	0.375	30.66		Cu.Ft.
10	Toilet Slab	02	14.87	7.12	0.375	79.40		Cu.Ft.
	Dismantling							
1	Doors	02	3	-	7	42	55.5	Sq.Ft.
2	Windows	01	3	-	4.5	13.5		
	Brick Masonry							
	Toilet							
1	Side wall	02	7.12	0.375	8	42.72	208.41	Cu.Ft.
	Front/Back wall	02	14.87	0.375	8	89.22		Cu.Ft.
	Internal Wall A	03	3.83	0.375	8	34.47		Cu.Ft.
	Internal Wall B	01	14	0.375	8	42		Cu.Ft.
	Deduct							
1	Door	05	2.5	0.375	7	32.81	33.93	Cu.Ft.
2	Ventilation	03	1	0.375	1	1.125		Cu.Ft.
	Plastering							
	Toilet							
1	Side wall	04	7.12	-	8	227.84	1111.52	Sq.Ft.
2	Front/Back wall	04	14.87	-	8	475.84		Sq.Ft.
3	Internal Wall A	06	3.83	-	8	183.84		Sq.Ft.
4	Internal Wall B	02	14	-	8	224		Sq.Ft.

	Deduct							
1	Door	10	2.5	-	7	175	181	Sq.Ft.
2	Ventilation	06	1	-	1	6		Sq.Ft.
	Brick Masonry							
	Community Hall							
1	Wall (9")	01	12.58	0.75	10	94.35	211.19	Cu.Ft.
2	Internal Wall A (4.5")	01	19.5	0.375	10	73.12		Cu.Ft.
3	Internal Wall B (4.5")	01	11.66	0.375	10	43.72		Cu.Ft.
	Plastering							
1	Wall (9")	02	12.58	-	10	257	880.2	Sq.Ft.
2	Internal Wall A (4.5")	02	19.5	-	10	390		Sq.Ft.
3	Internal Wall B (4.5")	02	11.66	-	10	233.2		Sq.Ft.
	Doors	08	2.5	-	7	17.5	140	Sq.Ft.
	Windows	01	3	-	4.5	13.5	13.5	Sq.Ft.
	Stage	01	-	-	-	-	-	-
	Parking R.C.C.	01	50	55	0.375	1031.25	1031.25	Cu.Ft.
	Painting							
1	Wall (9")	02	12.58	-	10	257	880.2	Sq.Ft.
2	Internal Wall A (4.5")	02	19.5	-	10	390		Sq.Ft.
3	Internal Wall B (4.5")	02	11.66	-	10	233.2		Sq.Ft.
4	Room Slab	01	7	5.84	-	40.88	40.88	Sq.Ft.
	Toilet							
1	Side wall	04	7.12	-	8	227.84	1217.39	Sq.Ft.
2	Front/Back wall	04	14.87	-	8	475.84		Sq.Ft.
3	Internal Wall A	06	3.83	-	8	183.84		Sq.Ft.
4	Internal Wall B	02	14	-	8	224		Sq.Ft.
5	Ceiling	01	14.87	7.12	-	105.87		Sq.Ft.

Abstract Sheet					
Sr. No.	Description	Quantity	Rate	Per	Amount
1	R.C.C. Work	218.61	255	Cu.Ft.	55745.55
2	Brick Masonry	385.67	245	Cu.Ft.	94489.15
3	Plastering	1810.72	90	Sq.Ft.	162964.8
4	Parking R.C.C.	1031.25	350	Cu.Ft.	360937.5
5	Painting	2138.47	25	Sq.Ft.	53461.75
6	Doors	140	145	Sq.Ft.	20300
7	Stage	60	95	Sq.Ft.	5700
8	Plumbing	4	35000	Nos.	140000
9	Dismantling	55.5	80	Sq.Ft.	4440
10	Ventilation	04	1100	Nos.	4400
11	Windows	13.5	250	Sq.Ft.	3375
				Total	**9,36,193.75/-**


LAYOUT PLAN OF NEW COMMUNITY HALL & THEIR AREA
LAYOUT PLAN OF NEW COMMUNITY HALL
Garden Area
Parking Area
Room 1
11'-6" X 12'-6"
Kitchen
11'-6" X 6'-6"
HALL
49' X 19'-6"
Stage
Room 1
7' X 5'-7"
TEMPLE
SCHEDULE OF OPENING
ANNOTATION DIMENSION
D1 6' X 7'
D2 3' X 7'
D3 3' X 7'
V1 6' X 4'-6"
W1 6' X 4'-6"
W2 3' X 4'-6"
V1 3' X 4'-6"
V2 1' X 1'
VISHWAKARMA YOJNA PHASE VIII



LAYOUT PLAN OF NEW COMMUNITY HALL

SCHEDULE OF OPENING	
ANNOTATION	DIMENSION
D1	6' X 7"
D2	3' X 7"
D3	2'-6" X 7"
W1	6' X 4'-6"
W2	3' X 4'-6"
V1	3' X 4'-6"
V2	1' X 1'

VISHWAKARMA YOJNA PHASE : VIII	
LAYOUT OF COMMUNITY PLAN	
INSTITUTE : PACIFIC SCHOOL OF ENGINNERING	
VILLAGE : SANKI	
NODAL OFFICER : Prof. MAYUR VEKARIYA	

13.1.4 EV Rikshaw stand

Full-electric three-wheeler that is strong, durable and economical to run against the conventional diesel cargo auto rickshaw.

Treo is a new all-new electric three-wheeler platform, backed by advanced battery technology and modern manufacturing capabilities. Treo offers superior ride quality,best-in-class comfort for drivers and passengers. This electric 3w also ensures higher savings as it costs a lot less to run, along with zero-emission technology, for a better tomorrow. .
What makes treo stand out in the market is the superior technology, affordable price, comfortable to ride, high on safety, modern, contemporary design and zero tail-pipe emission vehicle. The zero pollution and noiseless drive make treo a full-electric and totally environment-friendly 3w in india. Treo gets global battery technology with zero maintenance, lithium-ion batteries for more than five years of life. Mahindra is also offering cloud-based mobility platforms with remote monitoring of range, speed, location, and efficient fleet utilization.

Treo comes with quick charging with just 3 hours & 50 min for a 130 km range for treo. You can top up during lunch break can add over 32 km to the range. It is as simple as charging your mobile phone without any complexities. Treo also has a regenerative braking system. This helps in energy generation during braking fed back into the battery, thus, ensuring minimum wastage of energy.

48 v lithium-ion batteries

Route: - sanki >chalthan ring road >chalthan railway station

Time: - 08:00 am to 12:00pm, 03:00 pm to 07:00 pm

Passenger rent :- sanki to chalthan ring road – 15rs. Per person

sanki to chalthan railway station – 20rs. Per person.

Assumption income per day = 700 rs. Per day.

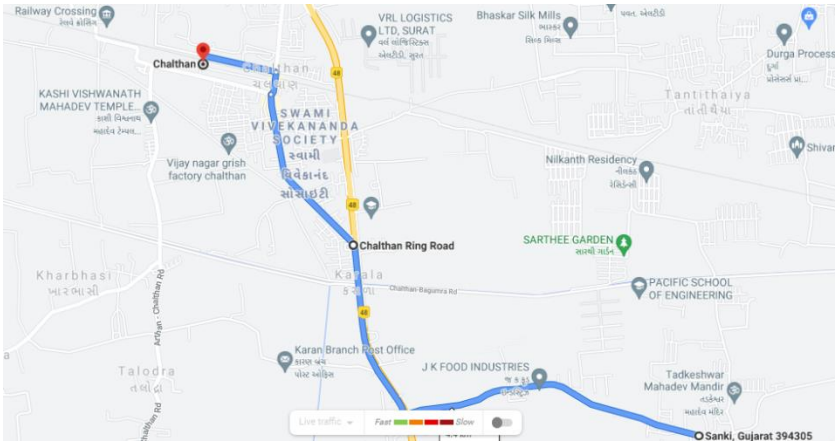
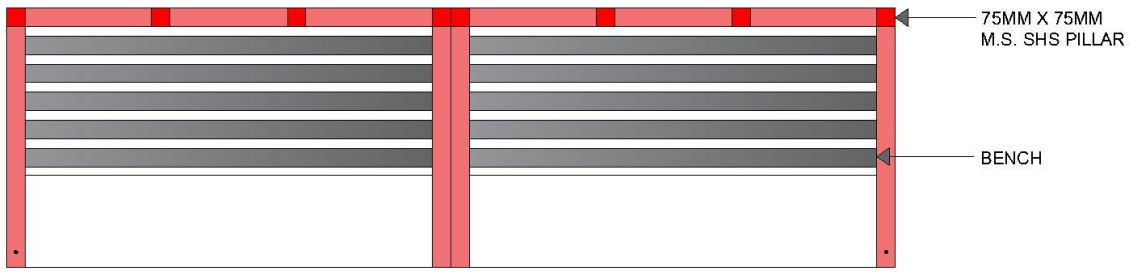


Figure 54: route map sanki to chalthan

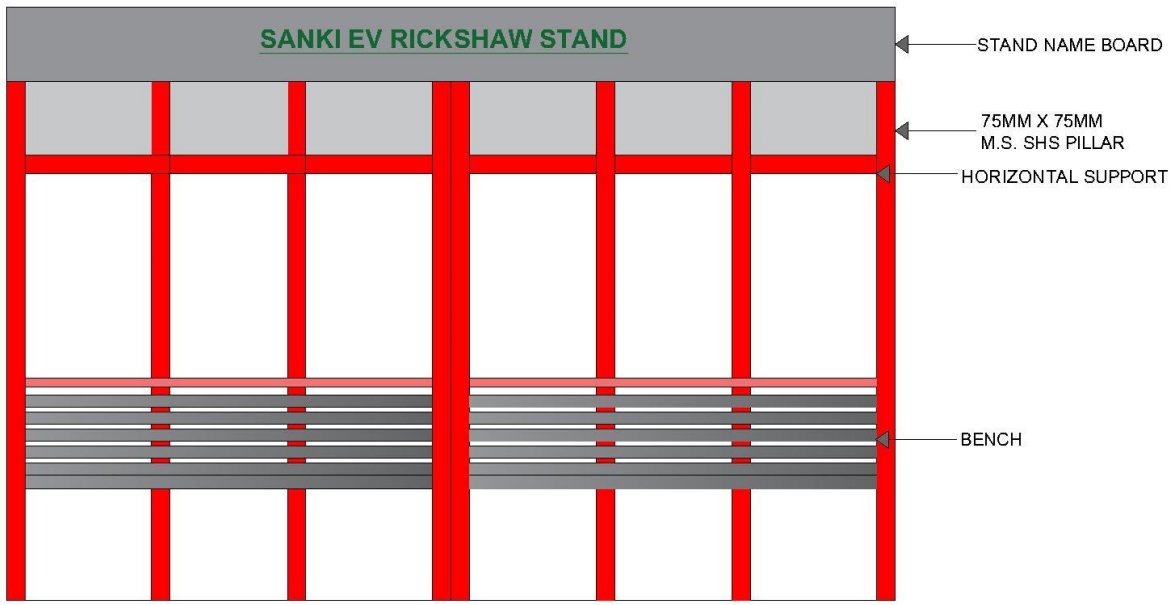
Measurement Sheet							
Sr. No.	Description	No.	Length	Width	Height	Quantity	Total Quantity
1	M.S. Box pipe (75mm x 75mm)	06	20	0.25	0.25	252 Kg.	282 Kg.
2	M.S. Box pipe (40mm x 40mm)	02	20	0.125	0.125	30 Kg.	
3	Roof Sheet	1	12	8	-	96 Sq.Ft.	
4	Rope	2	-	-	8.5	33 R.Ft.	
5	Bench	2	6	3.5	-	42 Sq.Ft.	
6	Labour Of Cutting & Welding Works	-	-	-	-	-	-
7	Colour Work	-	-	-	-	5Litre	
8	Stand Name	1	6	0.25	0.75	4.5 Sq.Ft.	

Abstract Sheet					
Sr. No.	Description	Quantity	Rate	Per	Amount
1	M.S. Box pipe (75mm x 75mm)	252	85	Kg.	19125
2	M.S. Box pipe (40mm x 40mm)	30	85	Kg.	2550
3	Roof Sheet	96	70	Sq.Ft.	6720
4	Rope	33	700	R.Ft.	23100
5	Bench	42	90	Sq.Ft.	3780
6	Labour Of Cutting & Welding Works	-	-	-	11,000
7	Colour Work	5 litre Colour + Labour			5500
8	Stand Name	4.5	150	Sq.Ft.	675
9	EV Rickshaw	02	160000	Nos	320000
				Total Amount	**3,92,450/-**

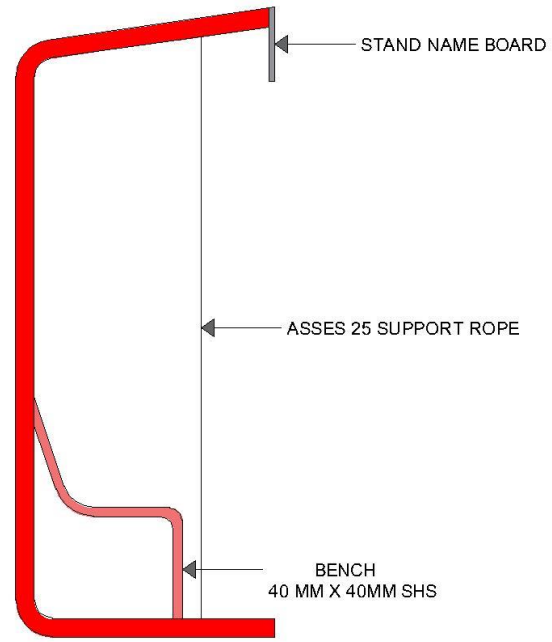
LEGENDS
SHS = SQUARE HOLLOW SECTION



LAYOUT PLAN OF EV RICKSHAW STAND



ELEVATION OF EV RICKSHAW STAND



SIDE VIEW OF EV RICKSHAW STAND

VISHWAKARMA YOJNA PHASE : VIII
LAYOUT OF COMMUNITY PLAN
INSTITUTE : PACIFIC SCHOOL OF ENGINNERING
VILLAGE : SANKI
NODAL OFFICER : Prof. MAYUR VEKARIYA

13.1.5 Cricket Ground

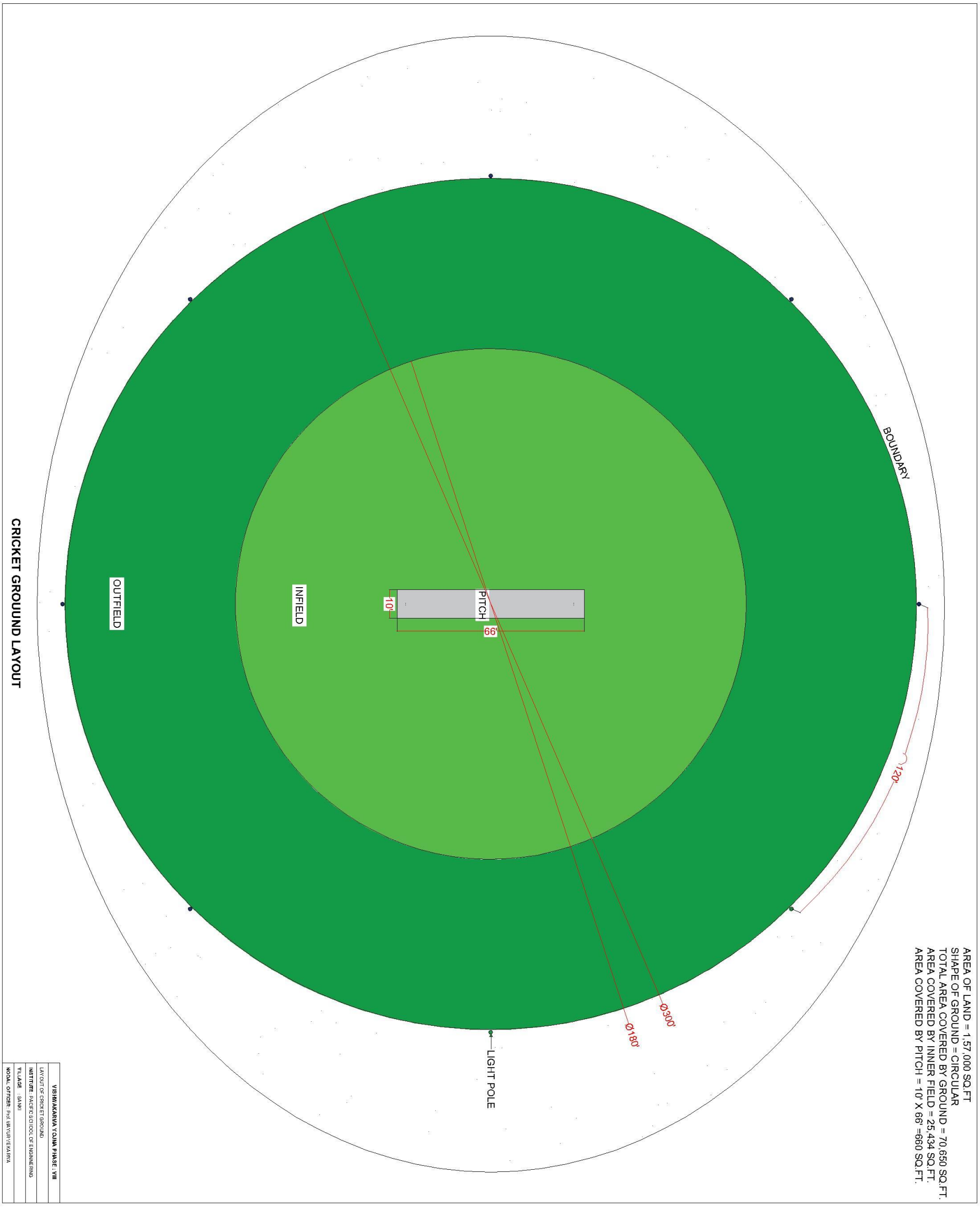
The village youngster who are much fond of cricket they have the ground near the hadpativas village and the ground has no pitch and the grass in it at night time there is also no light pole so we have design a ground as per there wish with the grass lawn nnd a pitch for cricket of concrete and some light poles and required facilities.

CRICKET GROUND

Measurement Sheet						
Sr. No.	Description	No.	Length	Width	Height	Quantity
1	R.C.C. Work	1	10	66	0.33	217.8 Cu.m.
2	Steel	1	1	1	1	484 Kg.
	1% of total r.c.c.					
3	Grass Lawn	1	-	-	-	70650 sq.ft.
4	Light Pole	8	-	-	-	8 nos.
5	Soil	-				35325 cu.ft.

ABSTRACT SHEET

Abstract Sheet					
Sr. No.	Description	Quantity	Rate	Per	Amount
1	R.C.C. Work	217.8	105	C.Ft.	22785
2	Steel	484	65	Kg	31460
3	Grass Lawn	70650	12.50	Sq.ft.	883125
4	Light Pole	8	8500	Nos	68000
5	Soil	35325	80	Cu.Ft.	2826000
				Total Amount	**3831370/-**


BOUNDARY
120'
Ø300'
Ø180'
LIGHT POLE
OUTFIELD
INFIELD
PITCH
10'
66'
AREA OF LAND = 1,57,000 SQ.FT
SHAPE OF GROUND = CIRCULAR
TOTAL AREA COVERED BY GROUND = 70,650 SQ.FT.
AREA COVERED BY INNER FIELD = 25,434 SQ.FT.
AREA COVERED BY PITCH = 10' X 66' =660 SQ.FT.
CRICKET GROUUND LAYOUT
VISHWAKARMA YOJNA PHASE : VIII
LAYOUT OF CRICKET GROUND
INSTITUTE : PACIFIC SCHOOL OF ENGINNERING
VILLAGE : SANKI
NODAL OFFICER : Prof. (MY)UPVEMARYA

13.1.6 Skill Development center

Skill Development Center is the place to embrace and support the skills of people of village and to make development in the farming skills of the farmers of the village. It also help to empower the development of women of the village and to support them in housing industries.

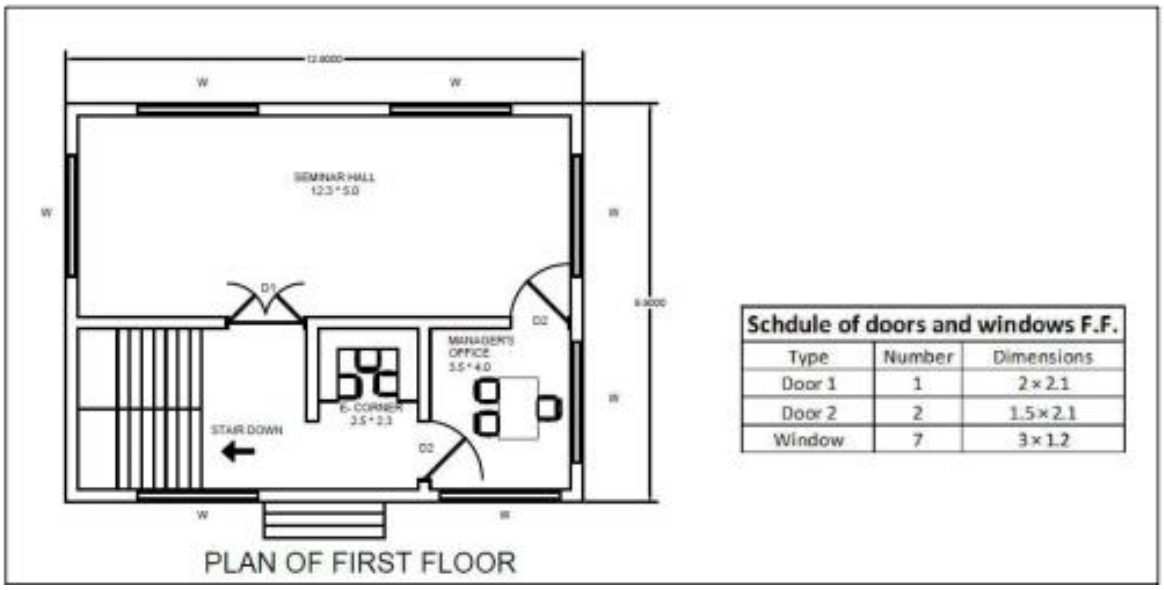
Measurement Sheet						
Sr. No.	Description	No.	Length	Width	Height	Quantity
1	Excavation for foudation					
		1	77.9	1.2	1.1	102.828
	.					
2	P.C.C work					
		1	80	0.9	0.2	14.4
						.
3	Brick work in foundation					
	1st step(0.6m)	1	82.1	0.6	0.3	14.778
	2st step(0.5m)	1	82.8	0.5	0.3	12.42
	3rd step(0.4m)	1	83.5	0.4	0.85	28..39
	total					55.588
4	Earth filling work in plinth					
	hall	1	9.6	5.7	0.55	30.096
	office	1	4	4	0.55	8.8
	Store	1	3	4	0.55	6.6
	Toilet for gents	1	2	3	0.55	3.3
	Toilet for ladies	1	2.8	3	0.55	4.62
	Space 1	1	6.4	4.3	0.55	15.136
	Space 2	1	5.4	2.4	0.55	7.128
	*NOTE;Height=(0.6-0.05<DPC>=0.55)					
	Total					75.68
5	D.P.C. at plinth level					In m2
		1	83.5	0.4		33.4
6	Brick mansonary in super structure					
		1	2	0.3	2.3	75.78
	Dectation of doors and windows					
	Door 1	1	2	0.3	2.1	1.26
	Door 2	2	3.5	0.3	2.1	1.86
	Door 3	2	1	0.3	2.1	1.46
	Door 4	3	0.8	0.3	2.3	1.562
	window	8	2.5	0.3	0.8	7.2
		4	0.8	0.3	0.8	0.768
	Sum					33.89

	Untel Quantity * Deduction					
	Door 1	1	2.3	0.3	0.25	0.1088
	Door 2	2	1.8	0.3	0.25	0.262
	Door 3	2	1.3	0.3	0.25	0.112
	Door 4	3	0.8	0.3	0.25	0.108
	Window	8	2.8	0.3	0.25	1.008
	Sum					1.4063
	Total Grickwork in super structure					60.3915
8	Brick work in parpet work					
	Horizontal wall	2	15.6	0.3	0.7	6.552
	Vertical wall	2	10	0.3	0.7	4.2
	Total Brick work in parapet wall					10.752
9	Plasting work					
	hall					In m2
	Horizontal wall	2	9.6	-	3	57.6
	Vertical wall	2	5.7	-	3	34.2
	office					
	Horizontal wall	2	4	-	3	24
	Vertical wall	2	4	-	3	24
	Store room					
	Horizontal wall	2	3	-	3	18
	Vertical wall	2	4		3	24
	Toilet for jents					
	Horizontal wall	2	2	-	3	12
	Vertical wall	2	3	-	3	18
	Sum					267
	Deduction					29.74
	Plaster work at gf					237.26
	Plaster work at ff					216.6
	Total plaster work					418.16

Abstract Sheet					
Sr. No.	Description	Quantity	Rate	Per	Amount
1	Excavation for foundation	102.82	350		35986
2	p.c.c work	14.4	3500		50400
3	Brick work in foundation	55.58	90		5002
4	Earth filling in plinth	75.68	65	m2	4919

5	Dpc at plinth	33.4	330		11022
6	Brick masonry in super structure	60.39	90		5434
7	R.c.c. slab	16.53	3500		57876
8	Brick wall in parapet wall	10.75	90		967.60
9	Plastering wall	261.80	360		94276
				Total Amount	**2,65,890**

Figure 55: plan of SDC



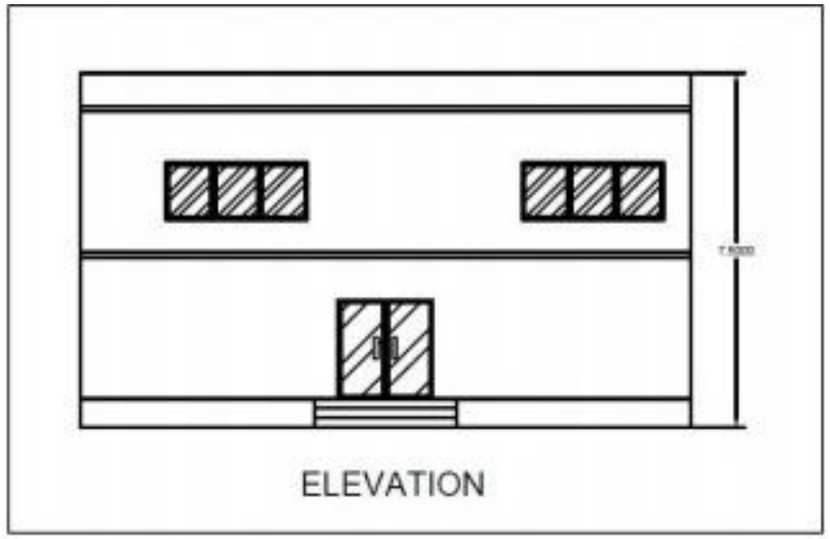


Figure 13. 14 Elevation of the Skill Development Center

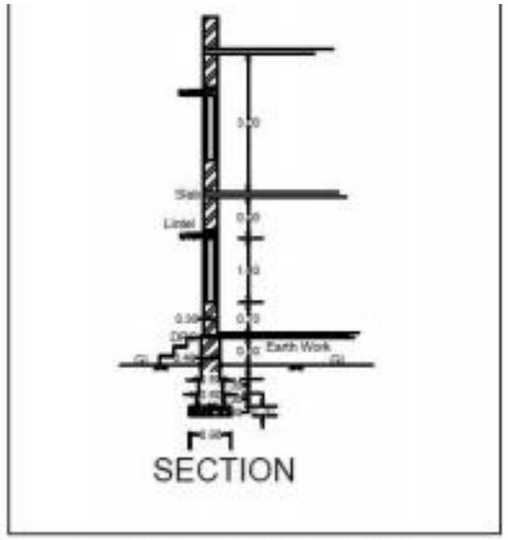
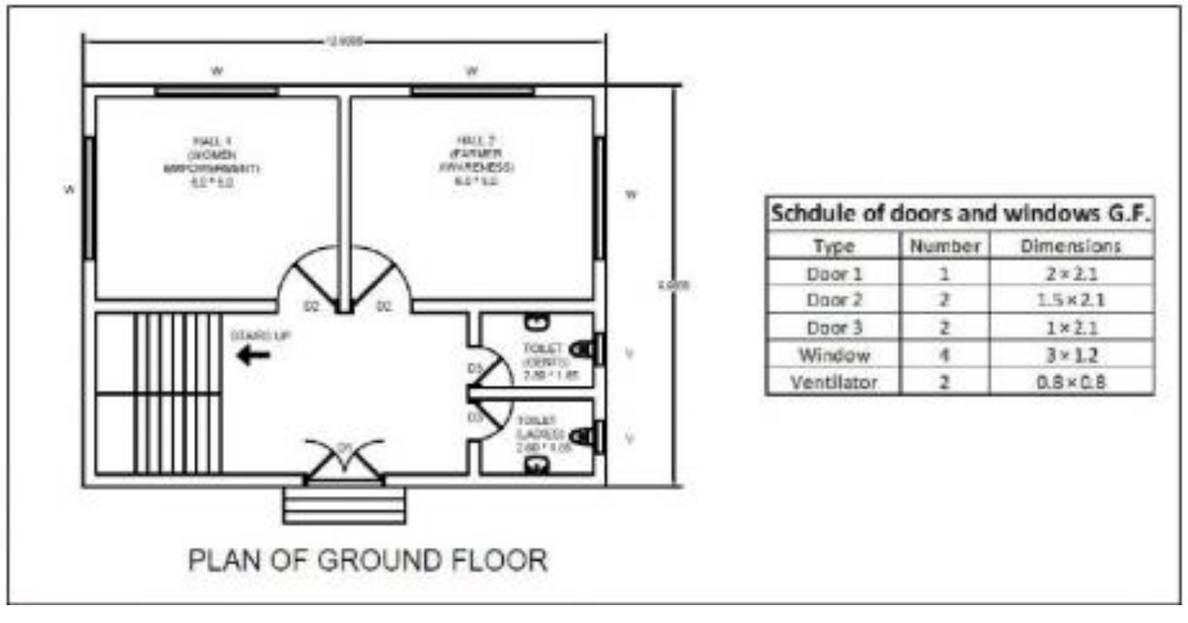
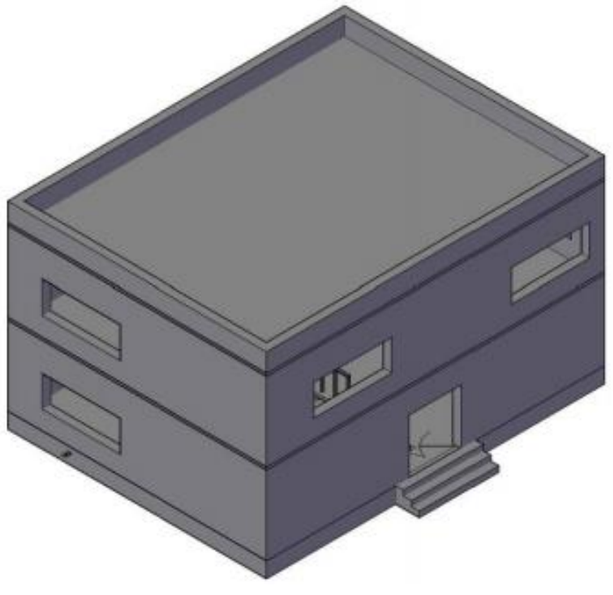


Figure 13. 13 Section of SDC



Schdule of doors and windows G.F.		
Type	Number	Dimensions
Door 1	1	2 × 2.1
Door 2	2	1.5 × 2.1
Door 3	2	1 × 2.1
Window	4	3 × 1.2
Ventilator	2	0.8 × 0.8



13.2 Reasons for Students Recommending this Design

As we have visited the village and surveyed, we discovered that villagers are facing some problems. So we decided to propose these design to ease these difficulties of the villagers.

- As there is no safety wall around pond at sanki village, villagers have to keep care of therechildrens safety.
- There is no grain storage in the village, the villagers are facing problems in storing grain at time of heavy rain and also in this corona situation, so we designed godown for grain storage.
- There is no development of cricket ground in the village so we have given idea to devlop it.
- The Community hall in the village is in a great requirement of maintenance, so we have provided the design of a new community hall.
- There is a complexity in transportation to highway as village is 2km in internal road, so we have design aEVrikshawwithrikshaw stand at village road for transportion.
- Skill Development Center is the place to embrace and support the skills of people of village and to make development in the farming skills of the farmers of the village. It also help to empower the development of women of the village and to support them in housing industries.

13.3 About designs Suggestions / Benefits of the Villagers

The villagers are facing many difficulties because of lack of some basic amenities. Keeping these problems in our mind we have tried to provide as much help as we can to develop the village and bring up the living standards of the people of the village, by providing these facilities.

- If we provide the safety wall at the road side of the pond-2 the people will get a safety of their children and also land sliding fault.
- Grain godownis fulfilling the basic and often requirements of the people of which majority engaged with the agricultural field , for the storage purpose.
- The EV Rikshaw stand is to be designed to get a transport facility to villagers to get nearby railway station, bus stop, highway.
- To spread awareness in the people and to make social development in the villagers a Skill Development Center could be of great help. As they can discuss the various techniques and develop new skills at farming by making camps and arranging seminars, this structure can be the one for these purposes.
- As we have discussed with sarpanch the community hall of the village is not in its best condition, we decided to re-build the hall by new design.

Chapter: 14

Technical Options with Case Studies

14.1 Civil Engineering

14.1.1 Advanced Earthquake Resistant

Techniques For Earthquake Resistant Design of Structures

There are many known and practiced measures to protect against seismic threats. Let's take a look at some of the **earthquake resistant techniques** used by the engineers world over to minimize the damage to structures due to earthquakes:

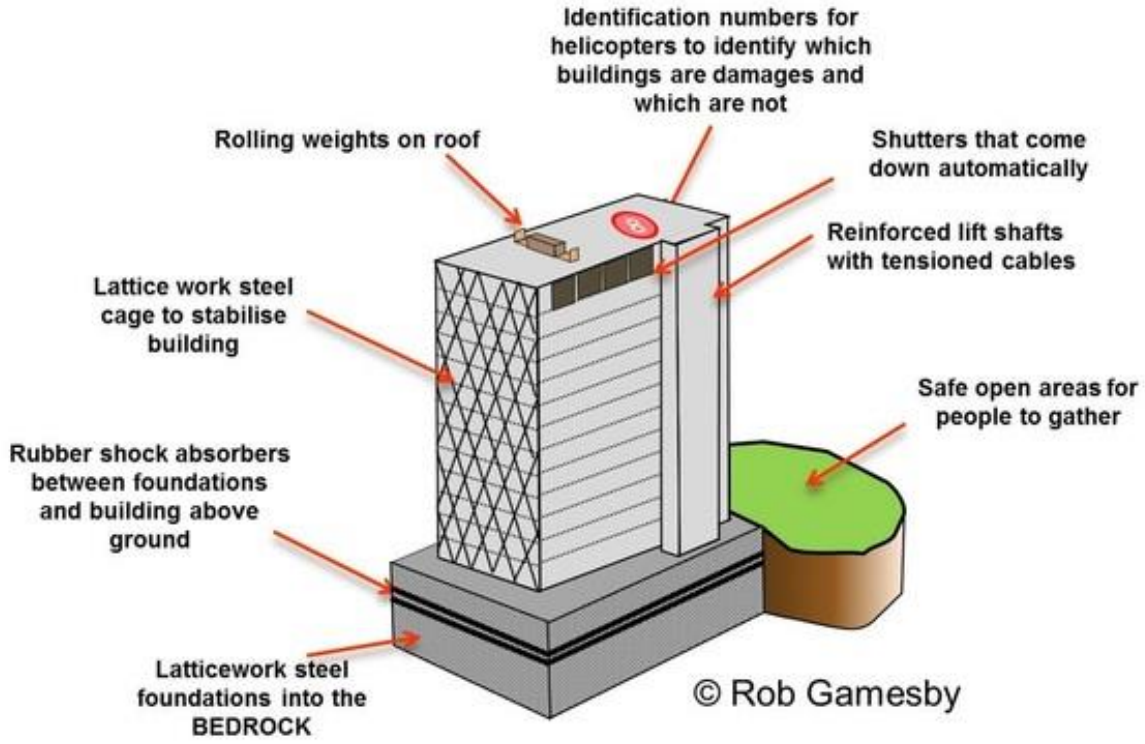


Figure 56: techniques of earthquake resistant

Floating Foundation:

The levitating or floating foundation separates the substructure of a building from its superstructure.

One way of doing this is by floating a building above its foundation on lead-rubber bearings that comprise a solid lead core covered in alternating layers of rubber and steel. The bearings are attached to the building and its foundation with the help of steel plates. So, when an earthquake occurs, the floating foundation can move without moving the structure above it.

In Japan this base isolation system works at a whole new level. Their design allows buildings to float mid-air. The system levitates, keeping the building on a cushion of air. The system has in-built sensors for detection of seismic activity and these sensors communicate with the air compressor that creates the layer of air between the building and its base.

Shock Absorption:

Similar to the shock absorbers used in vehicles, buildings also makes use of this technology. This **earthquake resistant technology** helps buildings slow down and reduce the magnitude of vibratory motions. Ideally shock absorbers should be placed at each level of the building – one end attached to the beam and the other end to the column. Each comprises a piston head that moves inside a cylinder full of silicone oil. During earthquakes, the horizontal motion of building will make the piston push against the oil, transforming mechanical energy from the quake to heat.

Rocking Core-Wall:

Modern high-rise buildings use this technique to improve seismic resistance at a low cost. To make this work, a reinforced concrete core is set through the heart of the structure, surrounded by elevator banks. Many modern high-rise buildings use this technique to increase seismic resistance in an affordable way. It works most effectively when used together with base isolation. For base isolation, elastometric bearings are built with alternating layers of steel and natural rubber/neoprene. The bearing thus created has low horizontal stiffness and vertical rigidity. The combination is highly effective, cost-friendly and simple to implement.

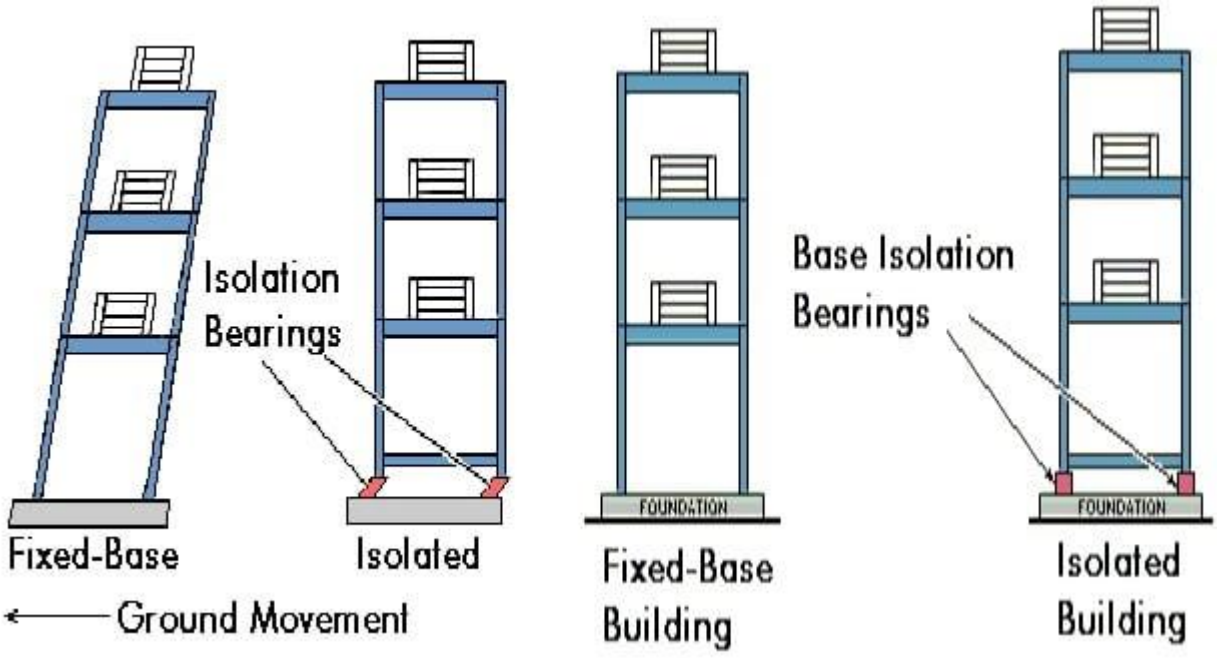
Pendulum Power:

The pendulum power technique works by suspending a huge mass near the top of the structure. This mass is supported by steel cables and viscous fluid dampers are placed between the mass and the building that it protects. In case of any seismic activity, the pendulum moves in the opposite direction to balance the energy. Each of the pendulums are tuned to sync with the natural frequency of the structure and these systems are called tuned mas dampers. Their goal is to counter resonance and reduce the structure's dynamic response.

Symmetry, Diaphragms And Cross-Bracing:

Generally one common criterion for seismic designs is symmetry. Seismic risks of asymmetrical designs are higher. L-Shaped, T-Shaped and split-level structures may be more visually appealing but they are also prone to torsion. Thus engineers design symmetrical structures to keep the forces equally distributed through the structure and limit ornamental elements like cornices, cantilever projections etc.

An earthquake has a significant lateral force. Seismic designing counteracts these forces in both horizontal and vertical structural systems. Diaphragms are integral to horizontal structures – such as floors of a building or roof. Engineers design each diaphragm on its own deck and strengthen it horizontally so it can distribute sideways forces with vertical structure parts.



With vertical structures, engineers have several approaches. Braced frames are often used in building walls. Braced frames rely on trusses for resisting sideways motion. Cross-bracing is a technique that uses two diagonal members in an X-shape to build wall trusses and it is a popular technique to build **earthquake resistant structures**.

Base-isolation are designed in buildings . It is a building designed to reduce amount of energy that reaches the building during earthquake. 2.Flexible joints and automatic shut off valves can be installed. Protecting Against Earthquake Damage Prepare a Seismic Risk Map for the globe which identifies rock types, liquefaction potential, landslide potential. Extensive geological surveying has to be done to identify all active faults, including hidden faults. Earthquake Resistant Design of Structures Enact building codes to design and build earthquake-resistant structures in high seismic risk areas. wood, steel and reinforced concrete are preferred as they tend to move with the shaking ground (unreinforced concrete and heavy masonry tend to move

independently an d in opposition to the shaking, battering one another until the structure collapses).

14.1.2 Seismic Retrofitting of Buildings

Seismic retrofitting of constructions vulnerable to earthquakes is a current problem of great political and social relevance. Most of the Italian building stock is vulnerable to seismic action even if located in areas that have long been considered of high seismic hazard. During the past thirty years moderate to severe earthquakes have occurred in Italy at intervals of 5 to 10 years. Such events have clearly shown the vulnerability of the building stock in particular and of the built environment in general.The seismic hazard in the areas, where those earthquakes have occurred, has been known for a long time because of similar events that occurred in the past.

It is therefore legitimate to ask why constructions vulnerable to earthquakes exist if people and institutions knew of the seismic hazard. Several causes may have contributed to the creation of such a situation.These are associated to historical events, fading memory, greed, avarice, poverty and ignorance.

Among historical events particularly relevant are wars, epidemics, and natural disasters which may limit, in a significant way, the available resources of a country. In such circumstances there is a tendency to build with poor materials and without too much attention to good construction techniques and safety margins. A situation of this kind occurred in Italy and in Japan after the Second World War and similar situations have occurred in Italy many times in the past. In such a situation it is possible that the phenomenon of fading memory occurs and past memories are easily erased.
In Italy commercial profits often result from the employment of poor material and workmanship rather than of the optimal utilization of the production factors. The depressing situation of poor quality control and material acceptance also falls into this framework, which, in most cases, results only in paperwork devoid of substantive value. Marginal propensity to expenditure sometimes ensures that even the owner prefers a low quality product to save resources for more immediate needs.
Among causes arising from ignorance there may be both an inadequate knowledge of the seismic hazard and design errors due to insufficient knowledge of the earthquake problem; also the inability to correctly model the structural response to the seismic action.
While considerable progress has been made in recent years by the research community in dealing with the above problems, it has become more difficult to transfer the results to the seismic engineering profession and the situation can only deteriorate in the near future.

Recent changes in the curricula of engineering schools are leading to a general impoverishment of thebasic knowledge and operational capabilities of our engineering graduates.
A final cause of vulnerability is connected with the maintenance of constructions; it is obvious that if a construction is not regularly maintained, much as happens for a motorcar, the mechanical properties of the materials may undergo local and global degradation with a significant loss of resistance of the 22 Seismic Retrofitting of Reinforced Concrete Buildings Using Traditional and Innovative Techniques.
structural members and of the entire construction. Also, changes in service conditions, often made arbitrarily, may lead to substantial changes in the structural behaviourresulting in a degradation of the structural response to the expected loading conditions.On the basis of what has been presented so far, it is not surprising that in areas long known to be subject to the seismic hazard it is not infrequent to find constructions vulnerable to earthquakes.

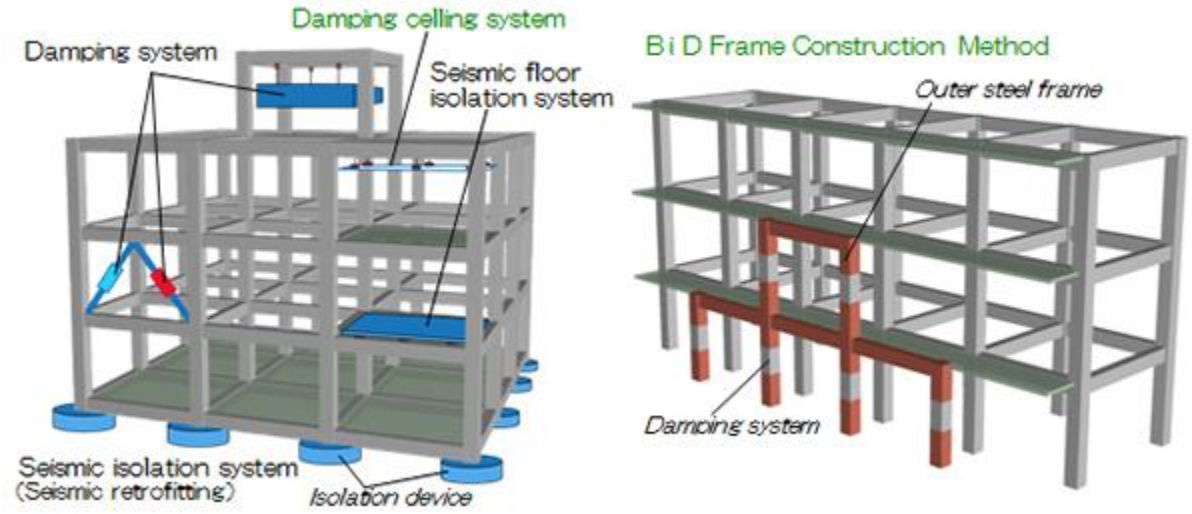


Figure 57: seismic retrofitting of building

These constructions need to be retrofitted to allow them to withstand the effects of the earthquake ground motion expected at the site considered. In the following sections some procedures used for the evaluation of the seismic resistance and vulnerability of reinforced concrete buildings will be described together with traditional and innovative techniques of seismic retrofitting of the same structures.
As will be clear from following arguments the aim of the paper is not to discuss in depth the state-of the-art of seismic retrofitting, but rather to give a general overview. The aim is also to focus on a few specific procedures which may improve the state-of-the-art practice for the evaluation of seismic vulnerability of existing reinforced concrete buildings and for their seismic retrofitting by means of innovative techniques such as base isolation and energy dissipation.

TRADITIONAL METHODS OF SEISMIC RETROFITTING

Traditional methods of seismic retrofitting fall essentially into two categories, one based on the classical principles of structural design which requires an increase of strength and stiffness, and the other based on mass reduction. Thus the first one tends to satisfy the design inequality by an increase of the capacity while the second one achieves the same result by a reduction of the demand. Since seismic design is different from ordinary design, both techniques may turn out to be quite ineffective as is shown in the following.
With reference to the first method, that is increase of strength and stiffness, the concept involved in its application can be understood using Figure 4. Suppose that the fundamental period of the structure is nrT, to which corresponds a demand an Sin pseudo-acceleration terms, which the structure cannot satisfy. On applying a strength and stiffness increment, the fundamental period will shorten from nrT torT, to which corresponds a demand arS much larger than the original one. It is, therefore, possible that the structure will be less safe in the new condition than in the original one.

14.1.3 Advance Practices in Construction field in Modern Material, Techniques

Precast Flat Panel System

This method of construction involves the procedure of making floor and wall units off site. For this, separate factory outlets and facilities is required. Once the panel units are made as per the design specification and requirements, they are brought to the site and placed. This method is best suited for repetitive construction project activities.Precast Flat Panel System

The panels manufactured has the services of windows, doors and the finishes. This method also brings building envelope panels which are provided with insulation and decorative cladding that is fitted by the factory which can also be used as load – bearing elements.

3D Volumetric Construction

As the name implies, the 3D volumetric construction involves the manufacture of 3D units in the form of modules in off site. At the time of installation, they are brought to the site and assembled module by module. Each modular unit manufactured are 3D units, hence this construction is called as 3D volumetric construction or

modular construction.3D Volumetric Construction

The transportation of the modules can be carried out in various forms or methods. This can involve the transportation of the basic structure or a completed unit with all the internal and external finishes, services installed within it, that the only part remaining is the assembly. The factory construction brings different unit of same product maintaining their quality throughout. Hence this method is best suited

Precast Concrete Foundations

For the rapid construction of foundation, the precast concrete system can be employed. This method is more suited for a bespoke design. Here, the elements required for the construction of foundation are constructed separately in the factory (off site) and brought to the site and assembled. The manufactured product must have the assured quality as specified by the designer.Precast Concrete Foundations

The foundation assembled is mainly supported by concrete piles. During assembling, both the systems are connected together. These foundation systems helps in increasing the productivity, increase quality, decrease the soil excavation quantity. This is best suited for extreme and adverse weather conditions. When the construction is dealt on a highly contaminated ground, this system of construction is a best choice.

Twin Wall Technology

The twin wall technology is a hybrid solution of wall system that combines the qualities of erection speed and precast concrete with the structural integrity of in-situ concrete. This type of wall system guarantees structural integrity and waterproof reliability for thestructure.Twin Wall Technology

The twin wall system has two walls slabs that are separated as shown in the figure-6. The two slabs are separated by a cast in lattice girders. The procedure involves:

The wall units are placed in the site.

The twin units are propped temporarily.

The wall units are later joined by means of reinforcing.

The gap between the wall units are filled by means of concrete.

This system of construction is faster than normal construction methods and economical. The twin wall system is mainly employed in association with the construction of precast floors.

Insulating Concrete Formwork

The system of insulating concrete formwork (ICF) have twin walled panels that are either polystyrene panels or blocks are employed. These are built quickly to create the formwork as the wall of the buildings.Insulating Concrete Formwork

The formwork that is made is filled with concrete. This concrete is factory produced that have quality assurance so that a ready – mixed concrete. Mostly the mix is ready mix concrete. Higher level of thermal insulation is provided by expanded polystyrene blocks. The concrete core will provide good robustness and better sound insulation.

Precast Cladding Panels

The cladding system is the installation of a material over another that finally act as a skin or a layer. This system of layer is not only intended for aesthetics, but it can help in controlling the infiltration of the weather elements.Precast Cladding Panels

No kind of waterproof condition is provided by the cladding. Instead, the cladding is a control measure against water penetration. This safely help in directing the water or the wind so that there is control of the runoff. This helps to prevent the infiltration into the building structure.

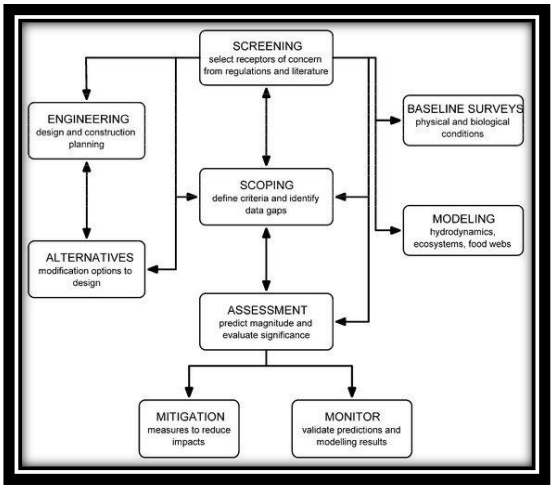
Concrete Walls and Floors

Concrete walls are mainly applied for seat walls, retaining wall, decorative exterior, and interior finishes. The concrete is also used a flooring material. As per the latest technology, the concrete floors can be provided with good finish to provide smooth and attractive flooring. When compared with any other material, the concrete floors provide a wide variety of material for

applications like acid-stained painted, radiant floors, overlays, and micro toppings. The concrete flooring can also be called as cement flooring. When compared with other flooring types, concrete flooring is affordable and maintenance is easy. Proper sealing of concrete flooring can be cleaned by a dust mop. Read More: Modern Surveying Instruments and Their Uses Artificial Island Construction Methods, Design and Advantages Smart Nanomaterials in Construction Industry and Their Applicationsfor repetitive projects so that rapid assembly of the products is possible.

14.1.4 Engineering Aspects of Soil mechanics - Environmental Impact Assessment

The City College of New York undergraduate Civil Engineering (CE) program has a well rounded curriculum which develops proficiency in structural, transportation, and environmental engineering. The 134 credit program is fairly traditional in that it requires statics, dynamics, mechanics of deformable bodies, structural analysis, finite element analysis, soil mechanics, transportation systems and engineering, fluid dynamics, hydraulics and hydrology, and environmental engineering of all undergraduate students. The program serves a diverse student population, a majority of whom elect to specialize in structural engineering. For example, in Fall of 2004 and Fall of 2005, 52% of the undergraduate students taking the environmental course specialized in structural engineering, and 30% specialized in transportation engineering. Only 18% of the undergraduate students actually specialized in environmental engineering. Since a majority of the students taking the course did not specialize in environmental engineering, the required environmental engineering course was considered to be irrelevant by many of the students. In response to these factors, a required course called Environmental Impact Assessment (EIA) has been introduced into the curriculum, just before the required Environmental Engineering (EnvE) course. The primary goals of the EIA course are to engage all CE students regardless of their specialization, and create an interdisciplinary forum to discuss and evaluate some of the social, economic, and environmental issues associated with CE projects. The secondary goals of the course are to prepare students for two higher level required courses, and promote the utility and importance of environmental engineering and thus recruit more students into the field of study.



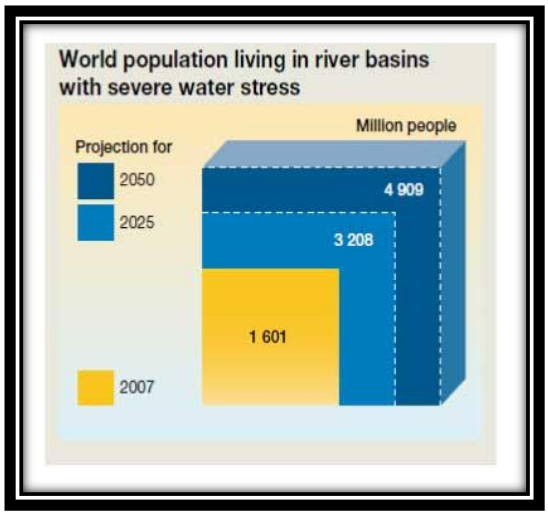
Soil impact: - Properties (e.g., soil classifications and properties, soils in NYC) - Transport of soil (e.g., soil loss by erosion using Universal soil loss equation) - Transport and transformation of pollutants (e.g., infiltration of water and water pollutants into unsaturated soil using Horton and across saturated soils using Darcy) - Pollutant mitigation (e.g., erosion minimization, well

extraction) - EIA description of land attributes (e.g., soil stability, resistance to natural hazards, landuse patterns) and example of soil EIA using Belleayre Resort project

The primary goals of the new course were to engage all the CE students, create a forum to discuss and evaluate social, economic, and environmental issues, and recruit more students into the environmental engineering specialization. The short term assessment of the new course indicated that its first two primary goals were reasonably met. The new course was perceived to be engaging and relevant, even to students whose specialization was not environmental engineering. Further, the average student performance in and perception of the course dramatically increased.

14.1.5 Water Supply-Sewerage system-Waste Water- Sustainable development

Water resources are under pressure from continuing population growth and urbanisation, rapid industralisation, and expanding and intensifying food production, particularly in developing countries and in urban areas. Urban populations may nearly double from current 3.4 billion to 6.4 billion by 2050. Numbers of people living in slums will rise even faster, with most of the rapid expansion in urbanization taking place not in megacities (21 of the world's 33 megacities are on the coast), but in small and medium sized cities with populations of less than 500 000.



This represents a global threat to human health and wellbeing, with both immediate and long term consequences for efforts to reduce poverty whilst sustaining the integrity of some of our most productive ecosystems. At least 1.8 million children under five years-old die every year from water-related diseases. Diarrhoeal diseases make up over four per cent of the global disease burden, 90 percent of which is linked to environmental pollution, a lack of access to safe drinking water and sanitation. Over half of the world's hospital beds are occupied by people suffering from water-related diseases.

The report reviews how the production and treatment cycle can be better understood and managed so that through better investment and management, major environmental, societal, and economic dividends can be achieved

What is the impact of agriculture on wastewater generation?

Agriculture is the single largest user of water, it uses an estimated 70 per cent of total global fresh water, returning the majority of this water back to the system. The daily drinking water requirement per person is 2–4 litres, but it takes 2 000 to 5 000 litres of water to produce one person's daily food. Optimizing agricultural practices including irrigation techniques, fertilization practices, and reducing water evaporation and crop selection, can save significant amounts of water with a subsequent reduction in wastewater production.

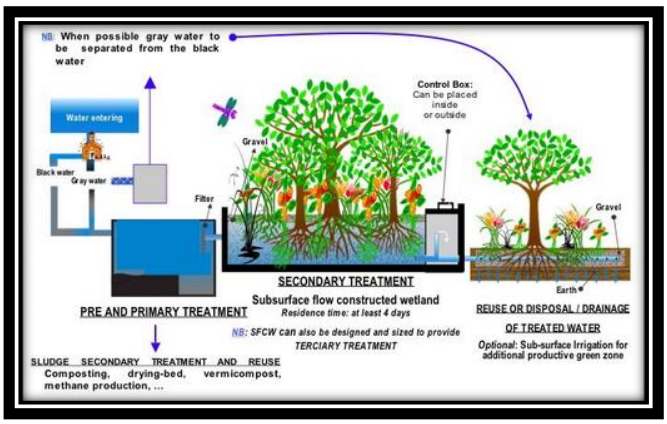


Figure 58: waste water impact

The wastewater produced from rural agriculture and livestock production, as well as inland urban areas, represents indeed the first phase in wastewater production and pollution and constitutes a considerable challenge for downstream users. It is characterized by organic and inorganic contaminants; originating from dissolved contents of fertilizers, chemical runoff (such as pesticides), human waste, livestock manure and nutrients.

Where agriculture takes place in upper catchments, it may be the first cause of contamination in the water basin. However, agriculture also takes place downstream, where the water may already be polluted by other human activities that result in domestic and industrial waste. Hence there is a complex relationship between water quality, agriculture and food quality, which is in turn linked to human and ecological health. In particular, the excess nitrogen and phosphorus introduced in their natural cycles drive algal booms, including toxic red tides and devastating hypoxic events that impact fish stocks or human health.

What is the impact of industrial activities of wastewater generation?

Overall, some 5–20 per cent of total water usage goes to industry. Water is an important requirement in many industrial processes such as heating, cooling, production, cleaning and rinsing, and this generates a substantial proportion of total wastewater.

Mining has traditionally been a major source of unregulated wastewater discharge in developing countries where more than 70 per cent of industrial wastes are dumped untreated into waterways where they pollute the usable water supply. It also seeps into the ground, contaminating aquifers and wells. The vast array of complex organic compounds and heavy metals used in modern industrial processes, if released into the environment, can cause both human health and environmental disasters. The contaminants in mine waste may be carcinogenic or neurotoxic to

people (e.g. lead and mercury) or extremely toxic to aquatic organisms (e.g. copper). There are many examples of persistent environmental damage caused by the discharge of toxic mine waste.

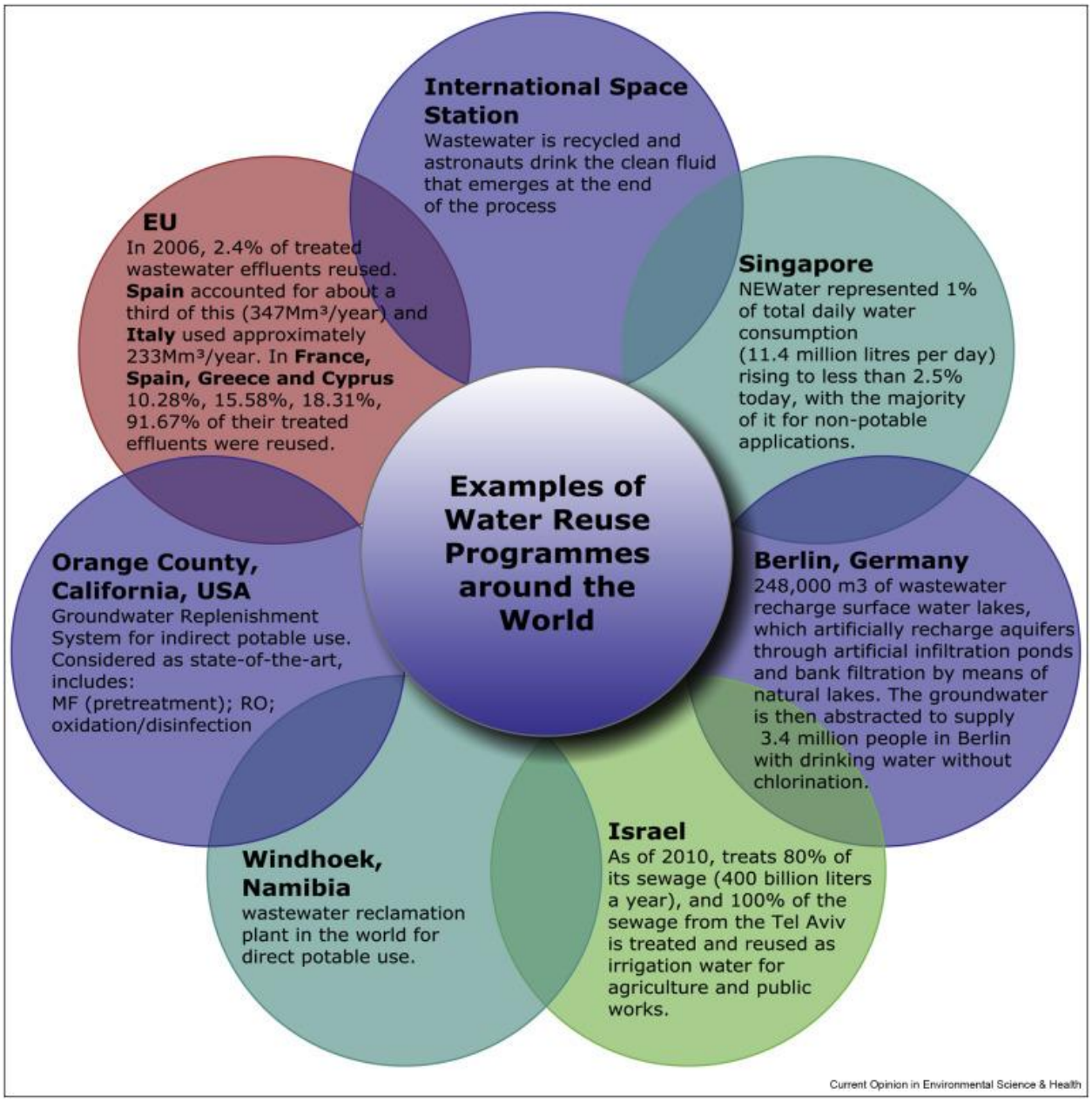
Cooling waters used in industrial processes, like steel manufacture and coke production, not only produce discharge with an elevated temperature which can have adverse effects on biota, but can also become contaminated with a wide range of toxic substances.

The food and agriculture processing industry can also be a major producer of wastewater particularly organic waste with high biochemical oxygen demand resulting in low oxygen levels or even anoxic conditions in natural waters. Slaughterhouses may also produce biological material such as blood containing pathogens, hormones and antibiotics.

The most cost-effective solutions usually focus on preventing contaminants from ever entering the wastewater stream or developing a closed system of water use.

Where are the opportunities for (re)using wastewater?

Improving watershed management will be crucial and finding ways to reduce, optimize and recycle water, will become increasingly essential in the future.



Wastewater is already being used for irrigation and fertilization and can continue to expand this role, particularly for peri-urban or urban agriculture, and home gardens. But maximizing water efficiency in the entire water chain, including before water enters the cities, and reducing production of wastewater should be primary goals throughout the entire management scheme.

There are clear health advantages related to wastewater use in agriculture, stemming directly from the provision of food (mainly vegetables) to urban populations or to generate biogas, thus turning the nutrients contained therein into resources. Typical concentrations of nutrients in treated wastewater effluent from conventional sewage treatment processes would supply all of

the nitrogen and much of the phosphorus and potassium normally required for agricultural crop production. Other valuable micro-nutrients and the organic matter contained in the effluent would also provide benefits.

It is estimated that 10 per cent of the worlds population relies on food grown with untreated, contaminated wastewater. Whilst providing affordable food, the use of wastewater for food production without proper management can pose a serious risk. Untreated wastewater is often used in the informal, unregulated sector, and directly benefits poor farmers who would otherwise have little or no access to water for irrigation.

Forests and wetlands, including salt marsh and mangrove forests, have also an important natural role to play in wastewater management, capturing water, filtering out nutrients and other contaminants, and releasing water into lakes, rivers and coastal seas.

How the right to water can be achieved, who takes responsibility for managing water supply and who should pay?

Because these water services are often viewed as a key public service and human right, privatization is often met with heavy resistance. There are many cases where privatization has led to improved water services by generating cheaper loans and higher investments, while bringing in expertise. However, it is also clear that unless the process is guided and under the close supervision of government agencies, there is a risk that the wider public interest will not be served and only wealthy customers will receive services.

Whilst experience has shown that privatizing water management as a means to gain more investments rarely results in positive results, the private sector has demonstrated improvements in operational efficiency and service quality. Hence, rather than outsourcing management, integrated partnership models where the private sector is given responsibility, not for the full water management but mainly for certain operational segments, can work best.

What about the use of bottled water and desalination as alternative sources of potable water?

Bottled water sales worldwide have increased rapidly with global consumption now at more than 200 000 million litres a year. But the cost of producing bottled water is a serious concern. In the United States it is estimated that the production of the bottles alone requires 17 million barrels of oil a year and it takes three litres of water to produce one litre of bottled water.

Desalination of sea water is often the only viable option for providing safe drinking water in many arid, coastal regions or isolated locations such as small islands. However, it is not without consequences, both in terms of high economic cost, energy requirements, and because the process requires the use of descaling and antifouling products, which can contain heavy metals

and toxic chemicals, and results in the discharge of a concentrated brine into receiving waters. Changes in salinity but also temperature over sustained periods could lead to local ecological changes, resulting in shifts in species diversity, opening the potential for the colonization of exotic and potentially invasive species, and changing ecosystem function.

What is the role of political and public sectors in wastewater management programmes?

In terms of public spending on health issues, investing in improved wastewater management and supply of safe water provides particularly high returns. Successful and sustainable management of wastewater requires a cocktail of innovative approaches that engage the public and private sector at local, national and transboundary scales.

Finding a solution requires integrated national to municipal water and wastewater planning that addresses the entire water chain – drinking water supply, production and treatment of wastewater, ecosystem management, agricultural efficiency and urban planning. Communities should plan wastewater management against future scenarios, not only current situations. Solutions must be socially and culturally appropriate. The cross-cutting nature of wastewater management requires collaboration and dialogue between partners who may not usually talk, for example farmers, public health officials, municipal and waste managers, planners and developers.

Inappropriate financing that does not produce results can have serious knock-on effects, leading to diminished public and political confidence and a lost opportunity to simultaneously tackle a problem and generate capital. Regarding industrial sources of wastewater, industry has a corporate responsibility to take action to ensure discharged water is of an acceptable standard, and can also benefit from access to cleaner water resources. Many incentives are based on voluntary measures, but governments and the public sector must play a central role in monitoring, regulating and also implementing policy to reduce toxic waste. In many countries, including European countries, the responsibility for industrial wastewater treatment still falls on ordinary taxpayers. In the absence of a userpays system for pollution control, large volumes of contaminated industrial wastewater end up in municipal sewage treatment plants, which are expensive to construct, operate and maintain.

Shadow pricing when a broader range of ecosystem services was incorporated (e.g. social welfare, GHG and nitrogen mitigation, waterfowl, recreation, etc…) is a valuation methodology that can also be used to assess choices regarding activities discharging by-products.

Countries must thus adopt a multi-sectorial approach to wastewater management as a matter of urgency, incorporating principles of ecosystem-based management from the watersheds down into the sea, connecting sectors that will reap immediate benefits from better wastewater management.

To be successful and sustainable, wastewater management must be an integral part of rural and urban development planning, across all sectors, and where feasible transcending political, administrative and jurisdictional borders. The public sector, including national, provincial and local governments, must be more proactive in funding wastewater management. Waste management planners must also consider both solid waste and wastewater in order to appropriately allocate resources. Planning processes should also provide an enabling environment for innovation, including at the community level but require government oversight and public management.

Chapter: 15

Smart and/or Sustainable features of chapter 8 & 13 designs, impact on society,(For allocated village development, villagers happiness, comfortable and for enhancement of the village) (With the smart village development concept as per your idea and village visit, modern technology with innovation),with doing small changes, period, amountexpenditure and benefit
a) Immediately b) Within 1year c) Long term (3-5 years) along with cost estimation.
b) If possible, List the sources of the funding available with the village gram panchayat.

15.1 Chapter 8 Design:

1. **Aaganwadi :**

- The Village has a small existing aaganwadi but it is 22 years old so it is totally damaged and rain water is leaked from roof of aaganwadi, so during monsoon, situation is so critical for children to sit in aaganwadi.
- The aaganwadi is design as per population census before 22 year ago but now a day's population is increased, so it is so congested for the children to sit in aaganwaadi, so we design a new aaganwadi as per current population data and as per current need.

Impact on society:

By providing of new aaganwadi the children will not to have to suffer from problems during monsoon and summer and have sufficient capacity to sit the all children's of villages & has good amenities like classrooms, hall & kitchen with a drinking facility & toilet facility.

Benefits :

a) Immediate Effect :
   As we provide new aaganwadi, it will be a step ahead for the children's future.
b) Within a year :
   After constructing a new aaganwadi after a year it will show effect on the children' of the villages as they will have a chance to gain knowledge and enhance their learning skills.
c) Long term :

By providing new aaganwadi the benefit after 3-4 years is to reduce children's fatigue, health problems & stress of care taker by contributing to one of their important responsibilities, nurturing a small child.

d) Sources of funding :
For the funding of construction of aaganwadi village can get help from the government schemes for learning and development like "SarvaShiksha Abhiyan".

2. Pond :

- As these are located in residential area these pond need some safety and a retaining wall in its periphery. There is no retaining wall is provided on its periphery sotaking the safety of villagers this is to be also designed.

Impact on society:

- The pond has to develop for recreational area and so the village can also get a good tourism spot. & also retaining wall will be constructed for the safety of the villagers of the village.

Benefits :

a) Immediate Effect :
As we provide retaining wall the erosion of soil has been stopped and it will instantly stop the filling of the pond by surface or periphery soil.

b) Within a year :
After constructing of retaining wall with a year it results in clean water in the pond so it can maintain the cleanliness of the water.

c) Long term :
By proving retaining wall after few years there is a safety against the periphery of pond and the soil become stable and stiff so we can also construct walk way around the periphery of the pond.

d) Sources of funding :
For the construction of the retaining wall around periphery of pond village have to provide financial help & from government under the various rural development schemes.

3. Pharmacy Store :

- The medical pharmacy in the village can be provide to have the necessary medicines & medical emergencies from the village. The people will need a pharmacy Store to collect the prescribed medicines from there.

Impact on society:

Pharmacy play a vital role connecting patients and medical professionals Community, pharmacy offer a trusted environment in which to reduce medication errors and improve safety, while reducing costs and improving the quality of care

Benefits :

a) Immediate Effect:
The people can get all the needed medical things from there. It will be a great help to women of the village to maintain sanitation during menstruation period.

b) Within a year:
People will get proper medical help for their problems related to medical. As there will be a place for medical help, people will try to be careful about health.

c) Long term:
The pharmacy can be expand as the necessary of the people and can be a great help for developing the village.

d) Sources of funding :
For the providing of pharmacy store village has to give financial help from the grampanchayat.

4. Entrance Gate :

A village entrance gate is the beauty of the village. The gate mentioned the name of the village for the unknown and outside people's of village to know the village name.

Benefits :

a) Immediate Effect:
The village gate is the main entrance of the village so it has to be attractiveto make village look better. By the gate a village can be identify and we can show important detail.

b) Within a year:
A village gate can be the land mark for the people to nearby villagers and it willmake address more feasible.

c) Long term:
After a long time a gate can be considered as a heritage structure as it will be passed down to the long term.

d) Sources of funding :
There are various provisions of grants from the government fordeveloping structures like this in rural areas.

5. Library :

As these is is not available in village the students of nearby area will get a new amenities for their study and educational ratio can be increased.

Impact on society:

- It provides the better facility for study to nearby village students

Benefits:

a) immediate effect :
after establishment of library the students are able to study over there easily avaibility of books.

b) Long term :-
After few years the students will be educated and don't need to go out of village for books.

c) Source of funding : by help from fund of panchayat or state govt.

6. Rain water harvesting :

- It provides the

Benefits:

a) Immediate Effect:
By providing rain water harvesting system on road the runoff water will be wasted in very few amount and will be stored in tank.

b) Within a year:
the tank will store a huge amount of water which was getting into creek thorungh runoff and will be helpful for irrigation and other purposes in village.

15.2Chapter 13 Design:

1. **Safety Wall of pond :**

   As these are located in residential area these pond need some safety wall on its periphery. There is no safety wall is provided on its periphery sotaking the safety of villagers this is to be also designed.

Impact on society:

- It provides the safety to the villagers &childrens from dropping into the pond.

Benefits:

c) Immediate Effect:
By providing safety wall it will stop the accident effect of childrens and villagers, hence it provide safety.

d) Within a year:
After having year the safety wall will be use as an aesthetic elevation of the pond we can paint the safety wall with different painting and moral, thoughts.

e) Long term :-
After few years pond is developed as an aesthetic environment & as a recreational property for the villagers.

f) Source of funding :
For the construction of the retaining wall around periphery of pond village have to provide financial help & from government under the various rural development schemes

2. **Community hall renovation :**

   Community hall is the place for the villager's for togetherness for the social development. There is already abuilding for this purpose but the building is damaged and not proper planned so it has to be redesigned.

Benefits:

a) Immediate effect:
From the survey we have come to know that the ideal village and smartVillage have community hall. So it will be the step forward to making the village smart.

b) Within a year:
The community hall is useful structures to held the functions in the village. Itwill be of help to provide the place for personal functions of the villagers with nominal chargesto the gram panchayat.

c) Long term effect:
After 3 to 5 years of having the community hall and utilizing it to make
Socio - cultural development in the villagers, it will be the reason for development of the village.

d) Source of funding :
Funds are provided to renovate from local a*rea* development scheme of government

3. Godown for grain storage :

Grain storage on a subsistence godown is primarily based on minimizing grain loss. Godown can gave the proper and safe place for grain that can be occupied by local farmers from agricultural field.

Impact on society:

By providing the grain storage godowns the local farmers have minimize their grain losses and it can help to increase their financial condition also.

Benefits:

a) Immediate effect:
By Providing Godowns local farmers can store their grains which are occupied from the local agriculture field.

b) Within a year:
After a year villagers have sufficient grains which can be stored in the godowns by farmers so village have not to suffer from any shortages and need not go out of village for buying grains.

c) Long term effect:
After few year if any drought and cyclone or any other natural calamities are occur farmer do not losses any grain of their agriculture field so it also have maintain their financial without losses and also villages has sufficient grains.

d) Source of funding :
There are various provisions of grants from the government fordeveloping structures like this in rural areas.

4. Cricket Ground :

Village cricket ground given to the playing of cricket in rural villages and villagers having a sport activity and village is known as a developed village as a smart village.

Benefits:

a) Immediate effect:
By providing cricket ground the people of villagers will have chance to play cricket and can help in sport enthusiasm in villagers.

b) Within a year:
After having a year local villages around the village has know about ground and also they will come to play cricket in these village with different teams this will help in to create great bonding with local villages.

c) Long term effect:
After having few year there is increase in the priority of village and this will help your *club* to grow your scope, attract new people and skills, help generate income.

d) Source of funding :
The main source is cricket ground income itself from local villages and other teams there are various provisions of grants from the government fordeveloping structures like this in rural areas.

5. Ev Rickshaw Stand :

The village is located about 1.5km from the NH-8 and has no transport facility like buses and auto.and the village internal road has no transport connectivity so we have planned to add a electric auto with stand of solar to get the free auto road connectivity.

Benefits:

Immediate effect:

1. By providing auto which will run with electricity and solar power to generate it the people in village will get a new easy connectivity to nearby transport facility and also at low cost

Within a year:

2. The village will be a conceptual idea for the free auto ride in a nearby town facility and also generate a few amount of revenue through it

Source of funding :

Funding for this can either be taken from the grant given to the sarpanch or by giving oppurtinuties to the electric auto company for the BOT Type conrtact for few years.

6. Skill development center:

Impact on society :

Skill Development Center is the place to embrace and support the skills of people of village and to make development in the farming skills of the farmers of the village. It also help to empower the development of women of the village and to support them in housing industries.

Source of funding :

Funding for this can either be taken from the grant given to the sarpanch and under various government schemes.

Chapter: 16

Survey By Interviewing With TalatiAnd/OrSarpanch

Gujarat Technological University, Ahmedabad, Gujarat

Vishwakarma Yojana: Phase VIII
Survey with Interviewing

SURVEY BY INTERVIEWING WITH TALATI AND/OR SARPANCH

Vishwakarma Yojana: Phase VIII

ALLOCATED VILLAGE SURVEY

An approach towards "Rurbanisation for Village Development"

CHAPTER- 16

Sr.	Questions	Yes/ No	Remarks
1	What are the sources of income in village?	Yes	Agriculture
2	What are the chances of employment in village?	Yes	
3	What are the special technical facilities in village?	No	
4	Is any debt on village dwellers?	No	
5	Are village people getting agricultural help?	Yes	
6	Is women health awareness Program organized in village?	No	
7	Are women having opportunity to work and income?	No	
8	Child girl education is appreciated in village?	Yes	
9	Facility of vaccination to child is available in village?	Yes	
10	Are village people aware about child vaccination and done to each and every child as per norms?	Yes	
11	Women help line number information is provided to village people?	No	
12	Is water scarcity in village? How many days per year?	No	
13	Is village under any debt?	No	
14	Is any serious issue due to debt from bank or any person happened in village?	No	
15	Is any suicide like incident observed in village due to government policy, debt or threatening?	No	
16	Is any death of patient occurred due to unavailability of medical facility in village?	No	
17	How many disabled (physically challenged) is observed in village? Provide list with Male/female/girl/boy with age and type of disability and reason of disability.	No	
18	Is village improvement is observed in comparative scenario from past to present?	Yes	
19	Is any unavoidable difficulty village people are facing? Any natural calamity is there?	No	
20	Life Living standard of girls and women is appreciated and uplifted in village?	Yes	

Nodal officer and students can add more questions. This is a sample. Having Minimum requirement.

Administration queries/ Difficulties:
GTU VY Section
Contact No – 079-23267588
Email ID: rurban@gtu.edu.in

તલાટી કમ મંત્રી
ગ્રામ પંચાયત સાંકી
તા. પલસાણા, જિ. સુરત
31/1/2021

સરપંચ
ગ્રામ પંચાયત સાંકી
તા. પલસાણા, જિ. સુરત

Chapter: 17

Irrigation / Agriculture ActivitesAnd Agro Industry, Altenate Technics

17.11. Gujarat Agricultural Scenario

Agro-Climate and Soils Gujarat has varying topographic features though a major part of the state was dominated by parched and dry region. The distinctive features of agro-climatic zones are briefly presented in Table as below. The average rainfall in the state varies widely from 250 mm to 1500 mm across various zones. Out of 8 agro-climatic zones, five are arid to semi-arid in nature, while remaining three are dry sub-humid in nature. Deep black to medium black soils dominate the soil types in the state.

Based on soil characterization, rainfall and temperature, eight agro climatic zones in Gujarat have been identified as under:

Agro climatic zone	Type of soil	Rain fall (in mm)
South Gujarat (Heavy Rain Area)	Deep black with few patches of coastal alluvial, laterite and medium black	1500 and more
South Gujarat	Deep black clayey	1000-1500
Middle Gujarat	Deep black, medium black to loamy sand	800-1000
North Gujarat	Sandy loam to sandy	625-875
Bhal & Coastal Area	Medium black, poorly drained and saline	625-1000
South Saurashtra	Shallow medium black calcareous	625-750
North Saurashtra	Shallow medium black	400-700
North West Zone	Sandy and saline	250-500

Table 15 : agriculture scenario

Land holding status

Total geographical area of the state is about 196 lakhs hectares. Out of total geographical area, 99.66 lakh hectares are under net cultivable area which is 50% of total geographical area. Total gross cropped area is about 122.11 lakh hectares in the state. Total gross irrigated area is 56.14 lakhs ha which is accounted for 45.97% of total crop area. Total operational land 2 holders in the state are 48.86 lakh, who possess the cultivable land with an average of 2.03 ha. per land holders. Out of total land holders, 37.16% marginal farmers, 29.25% small farmers, 22.10%Semi-medium farmers, 10.49% medium farmers & 1.00% large farmers. (Source: Agriculture Census, 2010-11).

Agriculture Production

Major Agricultural produce of the state include cotton, groundnut (peanuts), dates, and sugar cane, milk & milk products. Gujarat is the dominant producer of tobacco, cotton, and groundnuts in India. Other major crops produced in state are rice, wheat, jowar, bajra, maize, pigeon pea and gram. Castor, Groundnut and Mustard are the important oilseed s crops of the state. The state has notable achievement in production and productivity scenario in cotton, castor and groundnut. Cotton is an important crop of the state which covers 27.97 lakh ha. Area under cultivation and produced 98.72 lakh bales during 2014-15(as per fourth advance estimate of 2014-15) which is approximately 1/3 production of the country. State has recognition for highest area, production and productivity of castor in India. State produced 84% of total castor production of the country with area of 6.83 lakh ha. And 12.98 lakh MT production. State has a 30% share in country for production of Groundnut with 20.37 lakh MT production through area coverage of 14.02 lakh ha.

Soil health and Reclamation of problematic soil

- Gujarat model of Soil Health Card programme should be adopted in soil management.
- Revive the earlier concept of crop advisory module in soil health programme.
- Put more efforts through extension functionaries for better understanding of soil health card programme to the farmers and the survey should be done to evaluate the implementation of soil health cardprogrammes by farmers.

- Give more emphasis on micronutrient deficiency in irrigated area.
- Mapping of the soil health & micronutrient should be carried out.
- A scheme should be planned for immediate reclamation of problematic soil in coastal areas.
- Sea water ingress to be addressed immediately through creating Trenches and bandhara to protect sea water ingress.
- Under Ocean area development programme, submerged/affected area due to sea water should be studied.
- Erosion pattern due to sea water should be studied.
- Special programme for reclamation of saline and alkaline soil.
- Deep recharge canal like "SujalamSuflam" should be dug near to the coast across so the rainwater can be collected and water table can be recharged and the salty seawater percolation to underground can be prevented.
- To reduce salinity ingress of coastal soils, scheme should be planned to increase recharge/storage of rain water.
- The activities like deepening of lake, forestation and ground leveling should be greatly increased under watershed programmes. The representation of the people should be encouraged in the scheme.

Gorge and non-fertile fallow land should be used based on PPP model or it should be leased for agriculture / horticulture / Animal Husbandry / water accumulation, etc. purpose.

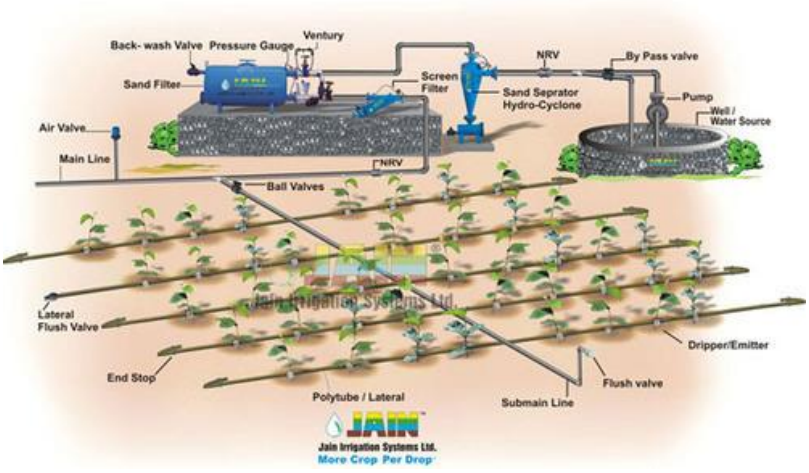
Water conservation, consumption and distribution for Irrigation

- Replicate Gujarat model of check dam, farm pond for water harvesting.
- Watershed development programme must be rejuvenated and it 16 should be strengthened. Watershed development programme should be under one department.
- Define the role of agriculturist in irrigation canal water distribution network and by strengthening it the efficiency of water distribution can be increased.
- For Micro Irrigation System, Gujarat model of PPP mode should be adopted at national level.

- Community based farm pond should be encouraged.
- The de-silting of farm ponds/dams should be covered in the schemes like MNREGA.
- Special attention given to tribal area/tracks by water impounding system.
- Revival of river basin system through a forestation, nala plugging, check dam etc.
- Drip irrigation should be made mandatory for crops like castor, cotton, fruit and vegetables which can be grown with drip irrigation system.
- Water use efficiency concept should be given priority to connect the water consumption and water use for agricultural production and irrigation rates should be uniform.
- The irrigation equipments sold under Government assistance which are as per the prescribed standards of government (ISI / BIS), the farmers should be allowed to purchase from appropriate organization / dealer / company.
- All Dam should be connected with the small water conservation units so that the water of flood can be stored at another places

Case study: Impact analysis of Micro Irrigation System in Kodinar Region ofGujarat

Impact of micro irrigation system (MIS) compared toflooding on cash crops and horticultural crops with respectto yield, water consumption, fertilizer application andeconomic benefits was studied in more than 70 farmersfield who were using drip irrigation for more than 3consecutive years from 2013 covering an area of around210 hectare at Kodinar region of Gujarat. The results ofthis case study showed that the yield of wheat, bajra,groundnut, sugarcane, cotton and mango increased 1.67,2.00, 2.02, 1.94, 1.54 and 3.65 times respectively due toMIS when compared to surface irrigation. MIS also savedwater and fertilizer application to the tune of 38.07 and40% inbajra, 45.84 and 25.68% in sugarcane, 37.44and 35.71% in cotton and 64.23 and 14.62% in mango.MIS saved water in wheat (29.4%) and groundnut(37.06%) but



did not have any effect on fertilizerapplication. The benefit cost ratio due to MIS was higherin sugarcane (4.83) followed by mango (4.67), groundnut(4.16), cotton (2.21), wheat (1.68) and bajra (1.12).

Materials and methods

The study was conducted in the Kodinar, Talala, Sutrapada and Una taluka of Junagadh district where drip irrigation system is promoted by AmbujaCementFoundation for economic benefit of farmers. Two blockswere selected so as to represent drip adoption and control(without drip). From the selected blocks, some villages wereselected deliberately where the adoption of drip irrigationis widespread and taken up for more than 3 year or at leastone crop taken by drip system per year. To examine theadoption and impact of drip irrigation on resource use, agricultural product ion and farm income, some drip-ad op ting farmers were selected in each village andcorrespondingly some non-drip adopters were selected in control villages. To select the drip adopters, the listoffarmers from the ACF was collected. Also, we enumeratedthe list of farmers adopting drip irrigation after discussionswith the villagers and private firms dealing drip irrigationsystems. Thus, a sample of 70+ farmer from 22 village wasstudied.

Water Saving

Water saving was studied by dividing Annual Irrigation schedule into 3 quarter with four months eachand calculating the total amount of water used in drip andwithout drip quarter-wise. Likewise weeding schedule and pesticides alsocalculated in both conditions (with and without drip).

Benefit Cost Ratio

BC ratio is the benefit increase due to extra moneyinvested in MIS by farmers. The Benefits CostAnalysiswas calculated by the following equation.

Annual cost of Drip irrigation system A.C = p x I x 1+i>n/ (1+i>n-1)

Where A.C= annul cost, p= Total Cost of drip (farmer contribution +all subsidy), =present of interest (10%), =life of drip (10 year) (Michael&Khepar, 2008)

Result and discussion

Water saving per Ha in terms of m3/Ha, Maximum amount of water was saved in sugarcane(6195 m3/Ha) followed by cotton, mango, wheat, bajraandgroundnut. But percentage wise water saving was more inmango with 64% followed by sugarcane (46%), bajra (38%),groundnut and cotton (37%) and wheat (29%).

Chapter: 18

Social Activities – Any Activates Planned By Students

We have decided to held a meeting with the villagers to inform them about our project and vishwakarma yojana and aware them about the future development of their village through this vishwakarma yojana but due to the second phase of corona virus get a more hectic and due to a mini lockdown and policy of not grouping of more than 50 people we have to postpone this and still this activity is pending.

Then we visited to the house of villagers and have encourage them to be take care of themselves and keep proper precaution and measure and also we given them a encouragement to get the vaccination as soon as possible and aware them about the process and advantages of getting vaccinated.

We have also taught the youngster to help there family member and neighbours who are unaware to do a online process for vaccination.

Chapter: 19

SANKI VILLAGESAGYQuestionnaire

SAANSAD ADARSH GRAM YOJANA (SAGY) Baseline Household Survey Questionnaire

Village: Sanki Gram Panchayat: Sanki Ward No.

Block: Palsana. District: Surat

State: Gujarat L S Constituency: Bardoli

1. Family Identity and Size

Name of Head of Household	Maniben Devjibhai Maisuriya							Male/ Female	F
SECC Survey ID:		Family Size	07	Over 18	05	6 to 18	02	Under 6	-

2. Category & Entitlement Details (Tick as appropriate)

Social Category[1]		Life Insurance	1. All Adults 2. Some Adults 3. None ✓	AABY ✗	1. Yes 2. No	Kisan Credit Card	Yes / No	
Poverty Status Year[2]:	1. BPL 2. APL ✓	Health Insurance	1. All Adults 2. Some Adults ✓ 3. None	RSBY ✗	1. Yes 2. No ✓	MGNREGS Job Card Number	NO	
PDS (If NFSA is not implemented)	Annapurna	Antyodaya	BPL		APL	Is any woman in the family member of an SHG? Yes / No		
PDS (If NFSA is implemented)	Annapurna	Antyodaya	Priority		Other			

2. Adults (above 18 years)

Name	Age	Sex M/F/O	Disability Status Y/N	Marital Status[3]	Education Status[4]	Adhaar Card (Y/ N)	Bank A/C (Y/N)	Social Security Pension[5]
1. Ilaneshbhai Maisuriya.	37	M		1		06	Y	0
2. Sabilcant Maisuriya.	36	M		2		05	Y	0
3. Payalben Maisuriya	36	F		2		05	Y	0
4. Lalaben Maisuriya.	62	F		3		02	Y	02
5. Maniben Maisuriya.	95	F		3		02	Y	0

3. Children from 6 years and up to 18 years

Name	Age	Sex M/F/O	Disability Y/N	Marital Code*	Level of Education: Code#	Going to School /College (Y/N)	Current Class	Computer Literate Y/N
1. Dax S. Maisuriya.	07	M		1	02	Y	03	N
2. Vidhi S. Maisuriya	09	F		1	03	Y	04	N

4. Children below 6 years

Name	Age	Sex M/F/O	Disability Yes/No	Going to School (Y/N)	Going to AWC Y/N	De-worming Done	Fully Immu-nised Y/N	Mother's Age at the time of Child's Birth
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—

[1] Scheduled Caste 1, Scheduled Tribe 2, Other Backward Castes 3, Other 4

[2] Enter the BPL Survey round being used in the Gram Panchayat for identification of BPL Families (e.g. 1997/2002/2011)

[3] *Marital Status: Not Married – 1, Married – 2, Widowed – 3, Divorced/Separated – 4*

[4] *Level of Education: Not Literate – 01, Literate – 02, Completed Class 5 - 03, Class 8th – 04, Class 10th-05, Class 12th-06, ITI Diploma-07, Graduate-08, Post Graduate/Professional – 09 (write the highest level applicable)*

[5] No Pension – 0, Old Age Pension – 1, Widow Pension – 2, Disability Pension – 3, Other Pension – 4 (mention)

SAANSAD ADARSH GRAM YOJANA (SAGY) Baseline Household Survey Questionnaire

. Hand washing

	Always		Sometimes		Never
After use of Toilet	Soap ✓	Other	Soap	Other	
Before Eating	Soap	Other	Soap	Other ✓	

6. Use of Mosquito Net

Children: Yes / No Adults: Yes / No

7. Do members take Regular Physical Exercise

	Yoga	Games	Other Exercises
Adults	Yes / No	Yes / No	Yes / No
Children	Yes / No	Yes / No	Yes / No

8. Consumption of Tobacco

	Smoking	Chewing
Adults	—	
Children	—	

9. House & Homestead Data

Own House: Yes / No	No. of Rooms: 04
Type: Kutcha / Semi Pucca / Pucca	
Toilet: Private / Community / Open Defecation	
Drainage linked to House: Covered / Open / None	
Waste Collection System	Door Step / Common Point / No Collection System
Homestead Land: Yes / No	Kitchen Garden : Yes / No
Compost Pit: Individual/ Group/ None	Biogas Plant: Individual/ Group/ None

10. Source of Water (Distance from source in KMs)

Source of Water		Distance
Piped Water at Home	Yes / No	
Community Water Tap	Yes / No	
Hand Pump (Public / Private)	Yes / No	100m
Open Well(Public / Private)	Yes / No	500m.
Other (mention):		—

11. Source of Lighting and Power

Electricity Connection to Household: Yes / No
Lighting: Electricity/Kerosene/Solar Power
Mention if Any Other: —
Cooking: LPG/Biogas/Kerosene/Wood/Electricity
Mention if Any Other: —
If cooking in Chullah: Normal/ Smokeless

12. Landholding (Acres)

1. Total		2. Cultivable Area	
3. Irrigated Area		4. Uncultivable Area	

13. Principal Occupations in the Household

Livelihood	Tick if applicable
Farming on own Land	
Sharecropping /Farming Leased Land	
Animal Husbandry	
Pisciculture	
Fishing	
Skilled Wage Worker	
Unskilled Wage Worker	
Salaried Employment in Government	
Salaried Employment - Private Sector	
Weaving	
Other Artisan(mention)	
Other Trade & Business (mention) ✓ Salmon.	

14. Migration Status

Does any member of the household migrate for Work: Yes / No. If Yes Entire Year / Seasonal

Does anyone below 18 years migrate for work: Y/N

15. Agriculture Inputs

Do you use Chemical Fertilisers	Yes/No
Do you use Chemical Insecticides	Yes/No
Do you use Chemical Weedicide	Yes/No
Do you have Soil Health Card	Yes/No
Irrigation: None/ Canal/ Tank/ Borewell/Other	
Drip or Sprinkler Irrigation: Drip /Sprinkler / None	

16. Agricultural Produce in a normal year (Top 3)

Name	Unit	Quantity

17. Livestock Numbers

Cows:______	Bullocks:______	Calves: ______
Female Buffalo:______	Male Buffalo:______	Buffalo Calves:______
Goats/ Sheep:______	Poultry/ Ducks:______	Pigs:______
Any other: Type ________________ No.______		
Shelter for Livestock: Pucca / Kutcha / None		
Average Daily Production of Milk(Litres):________		

18. What games do Children Play

1) cricket 2) Badminton.

19. Do children play musical instrument (mention)

None

Schedule Filled By: Parikh Umang & Mileesh Modi.

Principal Respondent:

Date of Survey: 31/05/21

Saansad Adarsh Gram Yojana (SAGY) Panchayat Details Survey Questionnaire

Note: Please aggregate information from village level questionnaires wherever relevant)

Basic Information

a. Gram Panchayat: Sanki

b. Block: Palsana

c. District: Surat

d. State: Gujarat

e. Lok Sabha Constituency: Bardoli

f. Number of Wards in the Gram Panchayat: _____

g. Number of Villages in the Gram Panchayat: 07

h. Names of Villages:

1. Sanki

Demographic Information

Number of Households 275 Total Population 1700 Male 540 Female 560

SC HHs 79 ST HHs 307 OBC HHs _____ Other HHs _____

I. *Access to Infrastructure / Facilities / Services*

	Infrastructure Facilities / Services	Located within the GP Yes (Y)/No (N)	If located elsewhere (N), distance from the GP office
a.	ANM/ Health Sub Centre	N	
b.	Nearest Primary Health Centre (PHC)	N	Chalthan
c.	Nearest Community Health Centre (CHC)	N	chalthan
d.	Nearest Post Office	N	Chalthan (02 km)
e.	Nearest Bank Branch (Any)	Y	Kanara bank
f.	Nearest Bank with CBS Facility	N	Chalthan
g.	Nearest ATM	Y	-
h.	Nearest Primary School	Y	-
i.	Nearest Middle School	N	chalthan
j.	Nearest Secondary School	N	chalthan
k.	Nearest Higher Secondary School / +2 College	Y	-
l.	Nearest Graduate College	Y	-
m	Nearest ITI / Polytechnic Centre	N	
n	Kisan Seva Kendra		

1

Saansad Adarsh Gram Yojana (SAGY) Panchayat Details Survey Questionnaire

(Note: Please aggregate information from village level questionnaires wherever relevant)

	Infrastructure Facilities / Services	Located within the GP Yes (Y)/No (N)	If located elsewhere (N), distance from the GP office
o	Agriculture Credit Cooperative Society	Nt	
p	Nearest Agro Service Centre	N	
p	MSP based Government Procurement Centre	N	
q	Milk Cooperative /Collection Centre	Y	—
r	Veterinary Care Centre	N	
s	Ayurveda Centre	N	
t	E – Seva Kendra	N	
u	Bus Stop	N	
v	Railway Station	N	chalthan (03 km)
w	Library	N	
x	Common Service Centre	N	

IV. Sports Facilities in the Gram Panchayat

a. Number of Play Grounds in the GP: Total 02 Public ✓ Private X

b. Mini Stadium : N Yes(Y) /No (N) *(Playground with equipment and sitting arrangement)*

V. Education, ICDS

a. Number of Angan Wadi Centres: 07

b. Number of villages without Angan Wadi Centres 0

Names of such villages: —

—

c. Schools (Number)

Primary Private: 0 Primary Govt.: 01

Middle Private: 0 Middle Govt.: 0

Secondary Private: _____ Secondary Govt.: _____

Higher Secondary Private: _____ Higher Secondary Govt: _____

VI. Public Distribution System

	Item	Private Contractor	Women's SHG	Gram Panchayat	Cooperative	Other (Mention)	Location in GP (mention Location)	If outside GP, Location & distance from GP HQrs)
a.	Cereal (Rice/ Wheat/ Millets)			✓				
b.	Kerosene			✓				
c.	Other (mention)			✓		Sugar cane P.		

Saansad Adarsh Gram Yojana (SAGY) Panchayat Details Survey Questionnaire

(Note: Please aggregate information from village level questionnaires wherever relevant)

VII. Coverage of Villages under different Facilities & Services

	Parameter	Villages Status[1]	Names of Villages Covered	Names of Villages not Covered
a.	Piped Water Supply Coverage to Villages	Covered ✓ / Not Covered	Sanki	—
b.	Hand Pump Coverage in Villages:	Covered ✓ / Not Covered	Sanki	—
c.	Coverage under Covered Drains:	Covered ✓ / Not Covered	Sanki	—
d.	Coverage under Open Drains:	Covered ✓ / Not Covered	Sanki	—
e.	Villages with Household Electricity Connection (Numbers)	Connected ✓ / Not Connected	Sanki	—

VIII. Land and Irrigation

	Private Land	Area in Acres		Common Land	Area in Acres		Irrigation Structure	No.
a.	Cultivable Land	592	d.	Pasture / Grazing Land	—	g.	Check Dam	0
b.	Irrigated Land	310	e.	Forests/ Plantations	—	h.	Wells/Bore Wells	
c.	Un-irrigated Land	282	f.	Other Common Land	10	i	Tanks /Ponds ✓	3

[1] Mention the number of Villages Covered and Not Covered

Saansad Adarsh Gram Yojana (SAGY) Panchayat Details Survey Questionnaire

(Note: Please aggregate information from village level questionnaires wherever relevant)

IX. Parameters relating to Households & Institutions

		Number
a)	Number of eligible Households for pension (old age, widow, disability)	—
b)	Number of Households receiving pension (old age, widow, disability)	—
c)	Number of eligible Households who are not receiving pension	240
d)	Number of Households eligible for Ration Card	—
e)	Number of eligible HHs having ration cards	—
f)	Number of households covered under RSBY (Rashtriya Swasthya Bima Yojana)	—
g)	Number of HHs covered under AABY (Aam Aadmi Bima Yojana)	—
h)	Number of active Job Card holders under MGNREGA	—
i)	Number of Job Card holders who completed 100 days of work during 2013-14	03
j)	Number of shops selling alcohol	35
k)	Number of BPL families	0
l)	Number of landless households	—
m)	Number of IAY beneficiaries	—
n)	Number of FRA[2] beneficiaries	—
o)	Number of Community Sanitary Complexes	—
p)	Number of Households headed by single women	—
q)	Number of Households headed by physically handicapped persons	—
r)	Total number of Persons with Disability in the village	—
s)	Number of SHGs	—
t)	Number of active SHGs	—
u)	Number of SHG Federations	—
v)	Number of Youth Clubs	—
w)	Number of Bharat Nirman Volunteers	—

Name and Signature of Surveyor and Respondent'

Surveyor	:PRI Respondent (Preferably Gram Panchayat Chairperson)	Official Respondent (Preferably senlormost Government official in the Gram Panchayat)	Date of Survey:
Umang Parikh Secretary Nilesh Modi	ગ્રામ પંચાયત સાંકી તા. પલસાણા, જિ. સુરત 31/05/2021		31/05/21 સરપંચ ગ્રામ પંચાયત સાંકી તા. પલસાણા, જિ. સુરત

[2] The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006

4

SAANSAD ADARSH GRAM YOJANA (SAGY) Village Details Survey Questionnaire

This questionnaire should be filled for each of the villages in the selected Gram Panchayat[1]

. Basic Information

a. Village: Sanki

b. Ward Number: _____

c. Gram Panchayat: Sanki

d. Block: Palsana

e. District: Surat

f. State: Gujarat

g. Lok Sabha Constituency: Bardoli

h. Number of Habitations / Hamlets in the Gram Panchayat: _____

i. Names of Habitations / Hamlets:

Demographic Information

Number of Households 275 Total Population 1200 Male 540 Female 560

SC HHs 79 ST HHs 307 OBC HHs _____ Other HHs _____

II. Access to Infrastructure/Amenities etc.

i.	Access to Infrastructure / Facilities / Services	Located in the Village Yes (Y)/No(N)	If located elsewhere (N), distance in kms from the village
a.	Nearest Primary School	Y	
b.	Nearest Middle School	N	
c.	Nearest Secondary School		
d.	Kisan Seva Kendra		
e.	Milk Cooperative /Collection Centre	Y	
g.	Health Sub Centre	N	
h.	Bank	N	Chalthan (Colleg)
i.	ATM	Y	
j.	Bus Stop	Y	
k.	Railway Station	N	Chalthan (03 km)

[1] While filling this the surveyor must collect the information from the Ward Member/s and relevant government officials

SAANSAD ADARSH GRAM YOJANA (SAGY) Village Details Survey Questionnaire

i.	Access to Infrastructure / Facilities / Services	Located in the Village Yes (Y)/No(N)	If located elsewhere (N), distance in kms from the village
l	Library	N	
m	Common Service Centre	N	
n	Veterinary Care Centre	N	

ii. Road Connectivity

a. Habitations connected by All-weather Roads *(1-All 2-None 3-Some)*

If 3 mention the name of the habitations where not available:_____

iii. Drinking Water Facilities

a.Piped Water Supply Coverage to Habitations: 1 *(1-All 2-None 3-Some)*

If 3 mention the name of the habitations not covered:_____

b.Hand Pump Coverage in Habitations: _____ *(1-All 2-None 3-Some)*

If 3 mention the name of the habitations not covered:_____

iv. Coverage of Habitations under Waste Management System

a. Coverage under Covered Drains: 1 *(1-All 2-None 3-Some)*

If 3 mention the name of the habitations not covered:_____

b. Coverage under Open Drains: 2 *(1-All 2-None 3-Some)*

If 3 mention the name of the habitations not covered:_____

c. Coverage under Doorstep Waste Collection: *(1-All 2-None 3-Some)*

If 3 mention the name of the habitations not covered:_____

v. Coverage of Habitations under Electrification

a. Coverage under Household Connections: *(1-All 2-None 3-Some)*

If 3 mention the name of the habitations not covered:_____

b.Coverage under Street Lighting: All*(1-All 2-None 3-Some)*

If 3 mention the name of the habitations not covered:_____

vi. *Sports Facilities in the Village*

a.Number of Play Grounds in the Village (minimum size 200 square meters): 03

b.Mini Stadium : N Yes(Y) /No (N)

vii. Education, ICDS

a. Number of Anganwadi Centres: 01

c. Schools (Number)

Primary Private: 0 Primary Govt.: 01

Middle Private: 0 Middle Govt.: 0

Secondary Private:_____ Secondary Govt.:_____

Higher Secondary Private: _____ Higher Secondary Govt: _____

SAANSAD ADARSH GRAM YOJANA (SAGY) Village Details Survey Questionnaire

viii. Land Category		Area in Acres		Land Category	Area in Acres		Irrigation Structure	No.
a.	Cultivable Land	592	d.	Pasture / Grazing Land	–	g.	Check Dam	0
b.	Irrigated Land	310	e.	Forests/ Plnatations	–	h.	Wells/Bore Wells	
c.	Un-irrigated Land	282	f.	Other Common Land	70	I	Tanks /Ponds	03

ix. Entitlement Related Parameters		
1	Number of active Job Card holders under MGNREGA	
2	Number of active Job Card holders who have completed 100 days of work	–
3	Number of shops selling alcohol	
4	Number of BPL families	
5	Number of landless households	0
6	Number of IAY beneficiaries	–
7	Number of FRA beneficiaries	–
8	Number of common sanitation complexes	–
9	Number of SHGs	–
10	Number of active SHGs	–
11	Existence of SHG Federation in the Village (Yes / No)	–
12	Number of Youth Clubs	–
13	Number of Bharat Nirman Volunteers	–

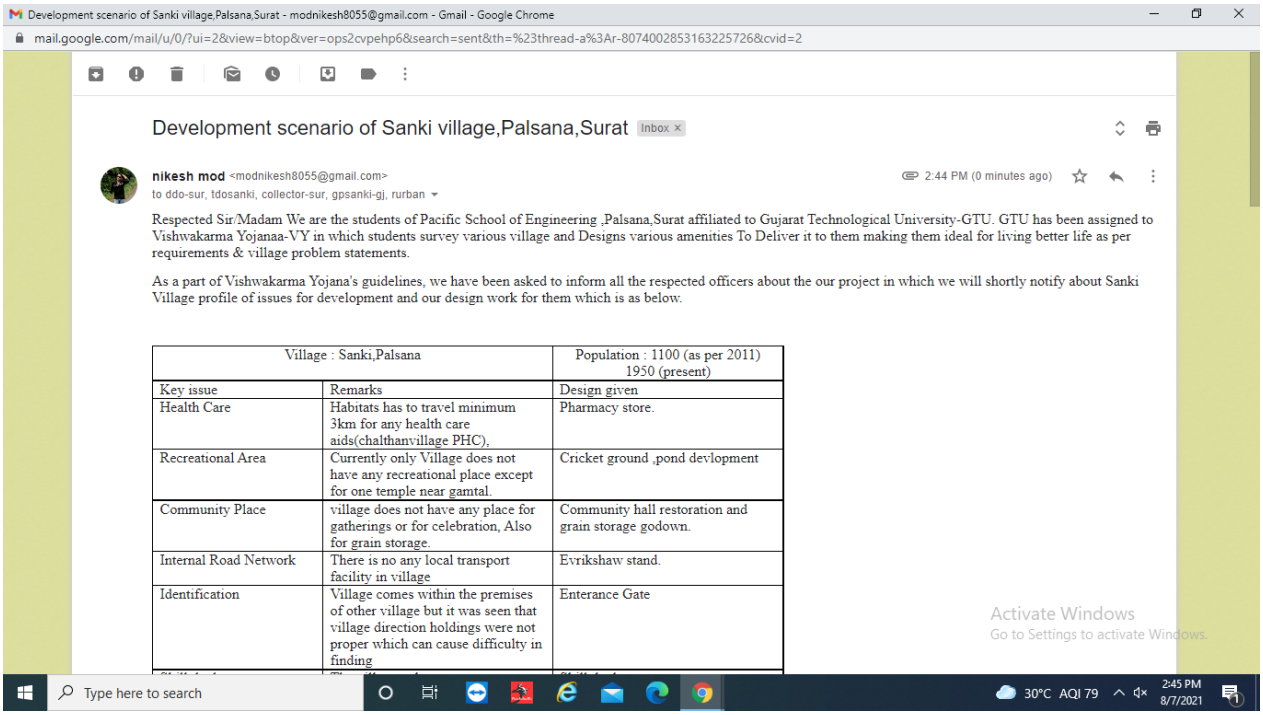
Name and Signature of Surveyor and Respondent'

Umang Parikh Nilesh Modi Nikesh Surveyor	તલાટી કમ મંત્રી ગ્રામ પંચાયત સાંકી તા. પલસાણા. જિ. સુરત તા. 31/5/2021 PRI Respondent (Preferably a ward member from a ward that is fully or partially covered under the Village)	Official Respondent (Preferably seniormost Government official in the Gram Panchayat)	31/05/21 સરપંચ ગ્રામ પંચાયત સાંકી તા. પલસાણા. જિ. સુરત Date of Survey

3

Chapter: 20

TDO-DDO-Collector email sending Soft copy attachment in the report



Development scenario of Sanki village,Palsana,Surat - modnikesh8055@gmail.com - Gmail - Google Chrome

mail.google.com/mail/u/0/?ui=2&view=btop&ver=ops2cvpehp6&search=sent&th=%23thread-a%3Ar-8074002853163225726&cvid=2

Development scenario of Sanki village,Palsana,Surat Inbox ×

nikesh mod <modnikesh8055@gmail.com> 2:44 PM (0 minutes ago)

to ddo-sur, tdosanki, collector-sur, gpsanki-gj, rurban

Respected Sir/Madam We are the students of Pacific School of Engineering ,Palsana,Surat affiliated to Gujarat Technological University-GTU. GTU has been assigned to Vishwakarma Yojanaa-VY in which students survey various village and Designs various amenities To Deliver it to them making them ideal for living better life as per requirements & village problem statements.

As a part of Vishwakarma Yojana's guidelines, we have been asked to inform all the respected officers about the our project in which we will shortly notify about Sanki Village profile of issues for development and our design work for them which is as below.

Village : Sanki,Palsana		Population : 1100 (as per 2011) 1950 (present)
Key issue	Remarks	Design given
Health Care	Habitats has to travel minimum 3km for any health care aids(chalthanvillage PHC),	Pharmacy store.
Recreational Area	Currently only Village does not have any recreational place except for one temple near gamtal.	Cricket ground ,pond devlopment
Community Place	village does not have any place for gatherings or for celebration, Also for grain storage.	Community hall restoration and grain storage godown.
Internal Road Network	There is no any local transport facility in village	Evrikshaw stand.
Identification	Village comes within the premises of other village but it was seen that village direction holdings were not proper which can cause difficulty in finding	Enterance Gate

Activate Windows Go to Settings to activate Windows.

Type here to search 30°C AQI 79 2:45 PM 8/7/2021

Development scenario of Sanki village,Palsana,Surat

Inbox

nikesh mod <modnikesh8055@gmail.com> Aug 7, 2021, 2:44 PM

to ddo-sur, tdosanki, collector-sur, gpsanki-gj, rurban

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Community Place	village does not have any place for gatherings or for celebration, Also for grain storage.	Community hall restoration and grain storage godown.
Internal Road Network	There is no any local transport facility in village	Evrikshaw stand.
Identification	Village comes within the premises of other village but it was seen that village direction holdings were not proper which can cause difficulty in finding	Enterance Gate
Skill devlopment	The villagers there are many women that require skill development to get some funds	Skill devlopmeent center

Sr.no	Design name	Period (months)	Amount expenditure	benefits
1	Aanganwadi reconstruction	2-3	5,53,887	To improve educational activities
2	Pharmacy store	1-15	1,06,236	To Facilitate Good Health
3	Enterance gate	1	42,215	Aesthetics And Heritage
4	Retaining wall of pond 2,3	1-2	4,56,232	Recreational Area
5	Library	2-2.5	5,45,000	To improve student education
6	Rain water harvesting For primary school For dharamshala	. 2-3	. 8,23,624 6,41,824	prevent occurring of mudding and collection of rain water
7	Safety wall of pond	1	37,512	Recreational Area with safety
8	Grain storage godown	2-3	7,75,445	To storage of crops safely
9	Community hall restoration	3-4	9,36,192	To organize events
10	EV Rikshaw stand	1	3,92,520	To connect all the places,at

				easy and cheap
11	Cricket ground	2-3	38,31,370	Recreational
12	Skill devlopment center	1-2	2,65,893	To get women empowerment

please find here with attached,

1.Detailed project report of sanki village

Best Regards,

Nikesh Mod & Umang Parikh

U.G.. Civil Engineering

pacific school of engineering,Palsana,surat

Gujarat technological university

Chapter: 21
Comprehensive report for the entire village

For the conclusion here we have given the entire report for the development of sanki village.

Sanki village is situated in the Palsana taluka of Surat district. The village is located about 21 km from Surat city and about 7 km from the Palsana. The village has total population of about 1100 as per the 2011 Census of India, out of which the male population is of 540 and female population is about 560. Total no. of households in the village are 275. The total population of SCs/ STs is 386, out of which 208 are male and 178 are female. Recently population residing here is about 2100+.

The village has all the basic amenities that a villagers need for there livelihood I.e, tap water, electricity , door to door garbage collection , underground drainage, primary school, aanganwadi , pond, panchayat office etc.

Village has a default of PHCcenter, transport facility, enterancegate , so it's a primary need of a villagers to get this facility for the betterment of the village so we have given detailed design for a medical center , EV Rikshaw stand , and the enterance gate.

Aanganwadi of the village were a children get there base schooling and booth for tikka etc..is also congested as per present population and damaged roofs so it needs to be reconstructed.

The village has pond which are without retaining wall and safety wall without retaing wall it will cause a land sliding in near future and will effect the residence nearby so its compulsory to build retaining wall in pond 2-3 and pond no.2 has no safety wall on its periphery.

Majorly the villagers are engaged with farming and there is no any storage facility for there crops, there should be a storage godown for mass storage of crops grown by villagers.

Community hall of village is build about and years ago and now it is not usefull because it is damaged completely and need some restoration for the usefulness of villagers. Also a cricket ground is to be developed according to the youth requirement.

We have tried our best and explored all the possible difficulties of villagers and concluded the solution referring our smart village (baben) and ideal village (ena), with all sustainable and environmental friendly.

Vishwakarma yojana is a good utilizing scheme of the government for development of rural areas, it is a step forward for making progress in country and reducing migration of people towards cities and increasing pleasure of village.